

The background of the entire image is a dense, textured wall made of numerous rectangular wooden planks. The planks are stacked in a staggered, brick-like pattern, creating a three-dimensional effect. The wood has various shades of brown, from light tan to dark, almost black, suggesting different types of wood or varying degrees of weathering and age. The lighting is somewhat uneven, with brighter areas in the center and darker tones towards the edges, emphasizing the texture and depth of the material.

REBUILD '24

**BUILDING MATERIAL
SALVAGE AND
REUSE: FROM
WHOLE BUILDINGS
TO INDIVIDUAL
MATERIALS**

Building Material Salvage & Reuse From Whole Buildings to Individual Materials



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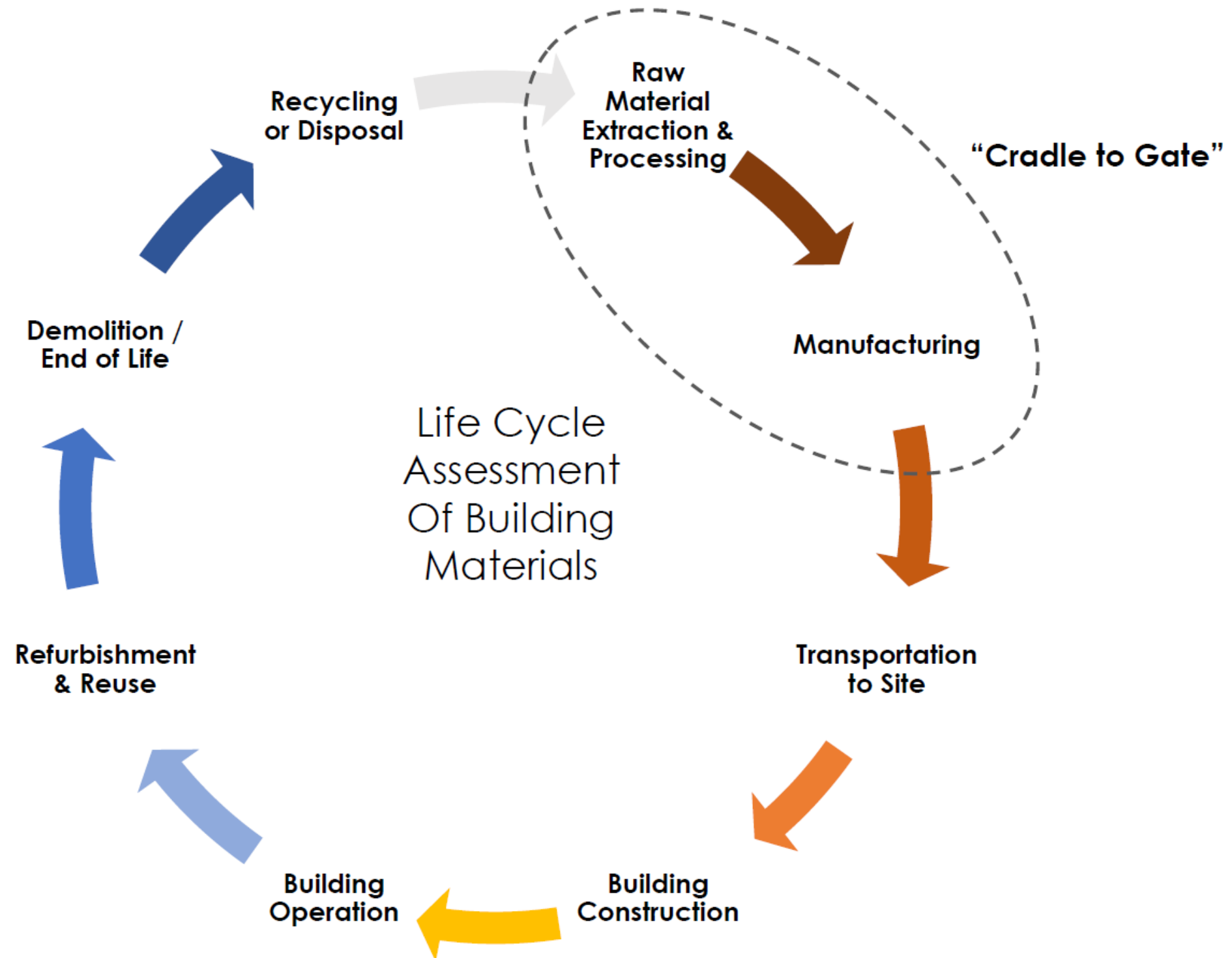


Learning Objectives:

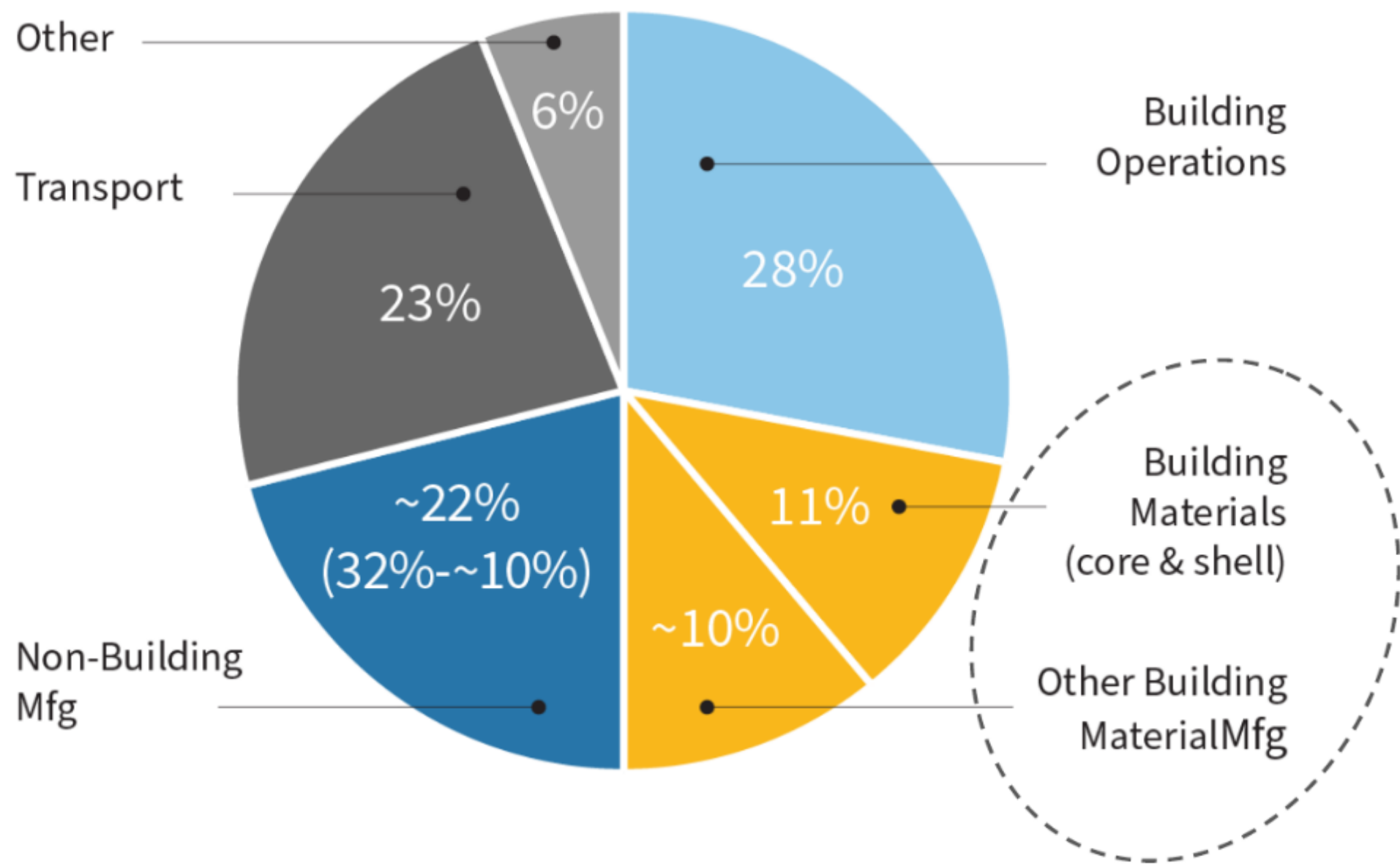
1. Participants will understand the life cycle impact of building materials and how applying circularity principles supports numerous social, environmental, and ecojustice issues.
2. Participants will have a frame of reference for real world applications of reuse and salvage strategies to move forward their organizations, reduce operational impacts, cut costs, and meet client needs.
3. Participants will be able to articulate how green building rating systems are addressing existing buildings and salvageable materials and how it influences increasing diversion and meeting corporate ESG goals.
4. Participants will be able to express how implementing building material reuse and adaptive reuse strategies will positively impact the clients triple bottom line.

*“There is no such thing as waste, only resources in the wrong place.”
(Braungart & McDonough, 2002)*

Building Lifecycle & Embodied Energy



Global CO₂ Emissions by Sector: Building Materials Are ~22%



Adapted from 2019 Global Status Report, Global Alliance for Building and Construction (GABC) and Architecture 2030.



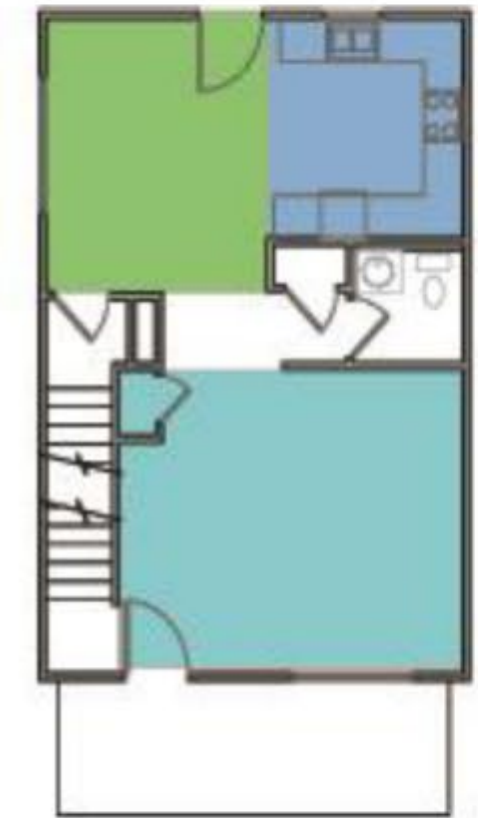
The Opportunity



Case Study: Habitat Homes on Elm: Retrofit vs New Construction



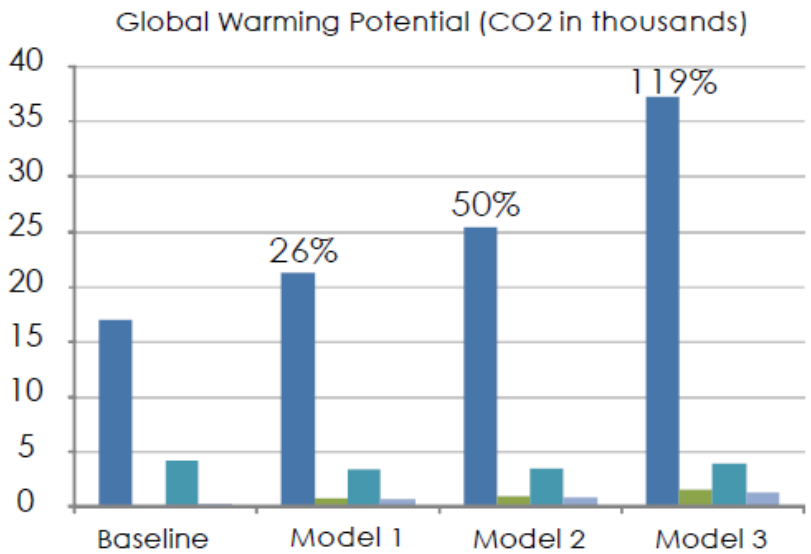
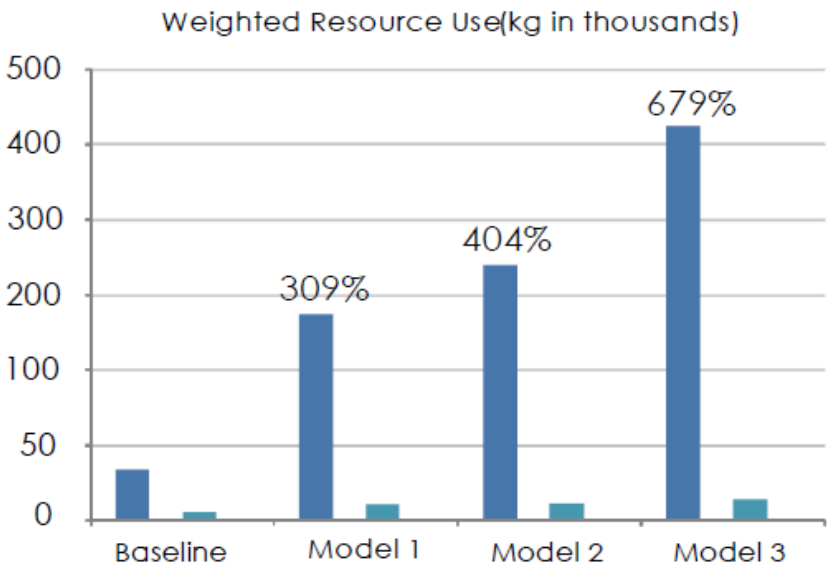
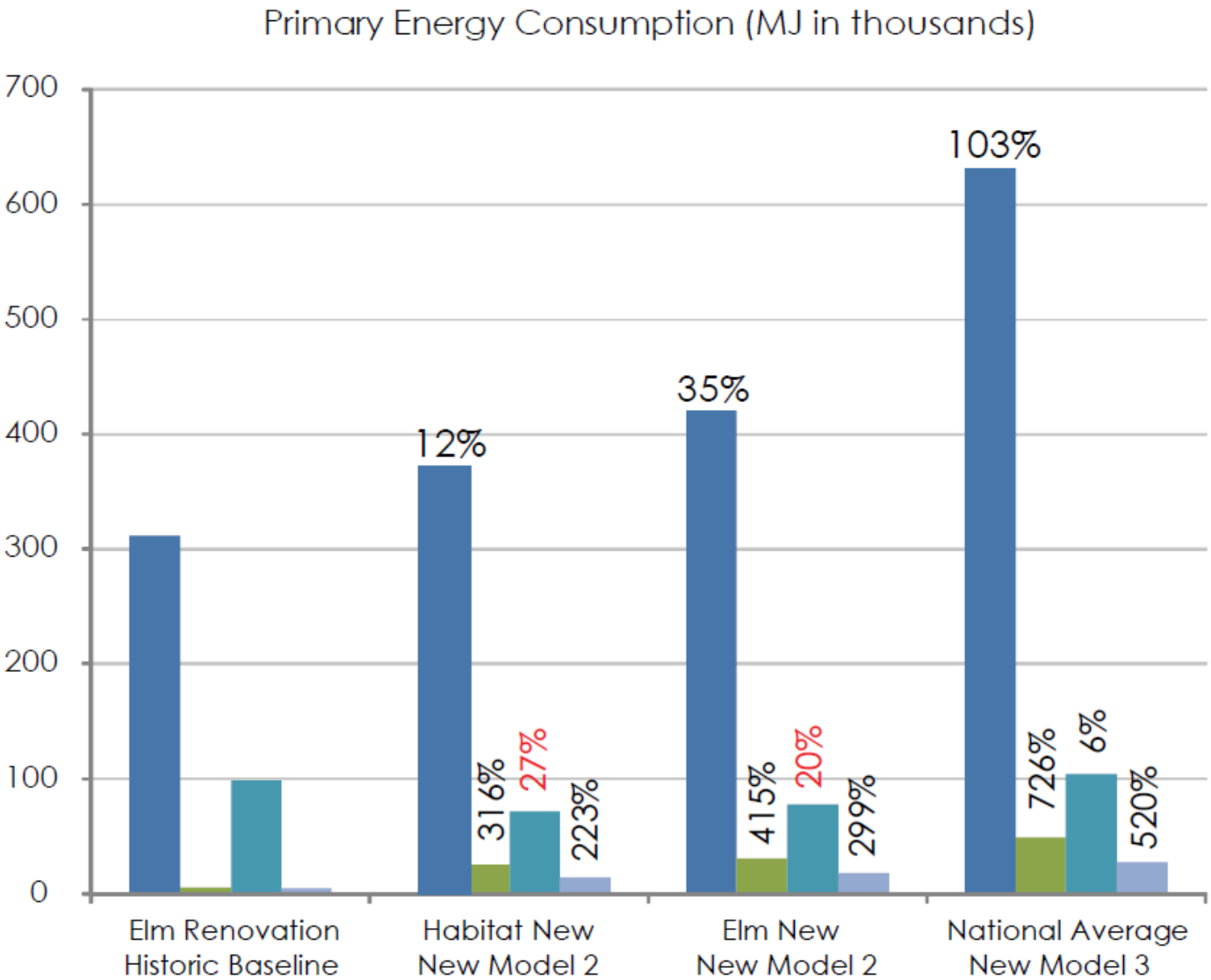
Elm Street
Historic Baseline



Habitat New Construction
Model 1

- Kitchen
- Dining Room
- Living Room

Case Study: Habitat Homes on Elm: Life Cycle Assessment

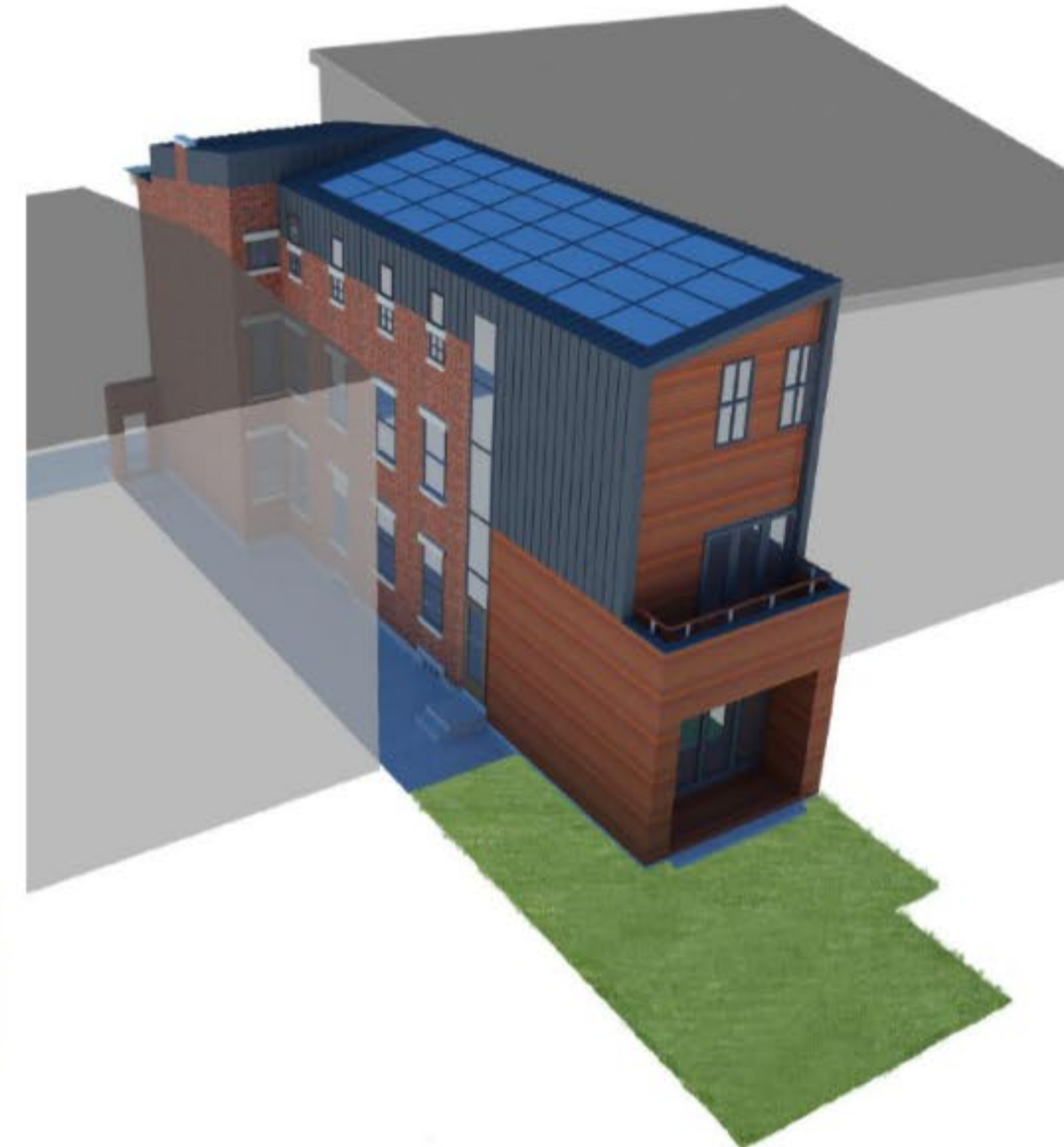


- Manufacturing
- Construction
- Maintenance
- End-Of-Life

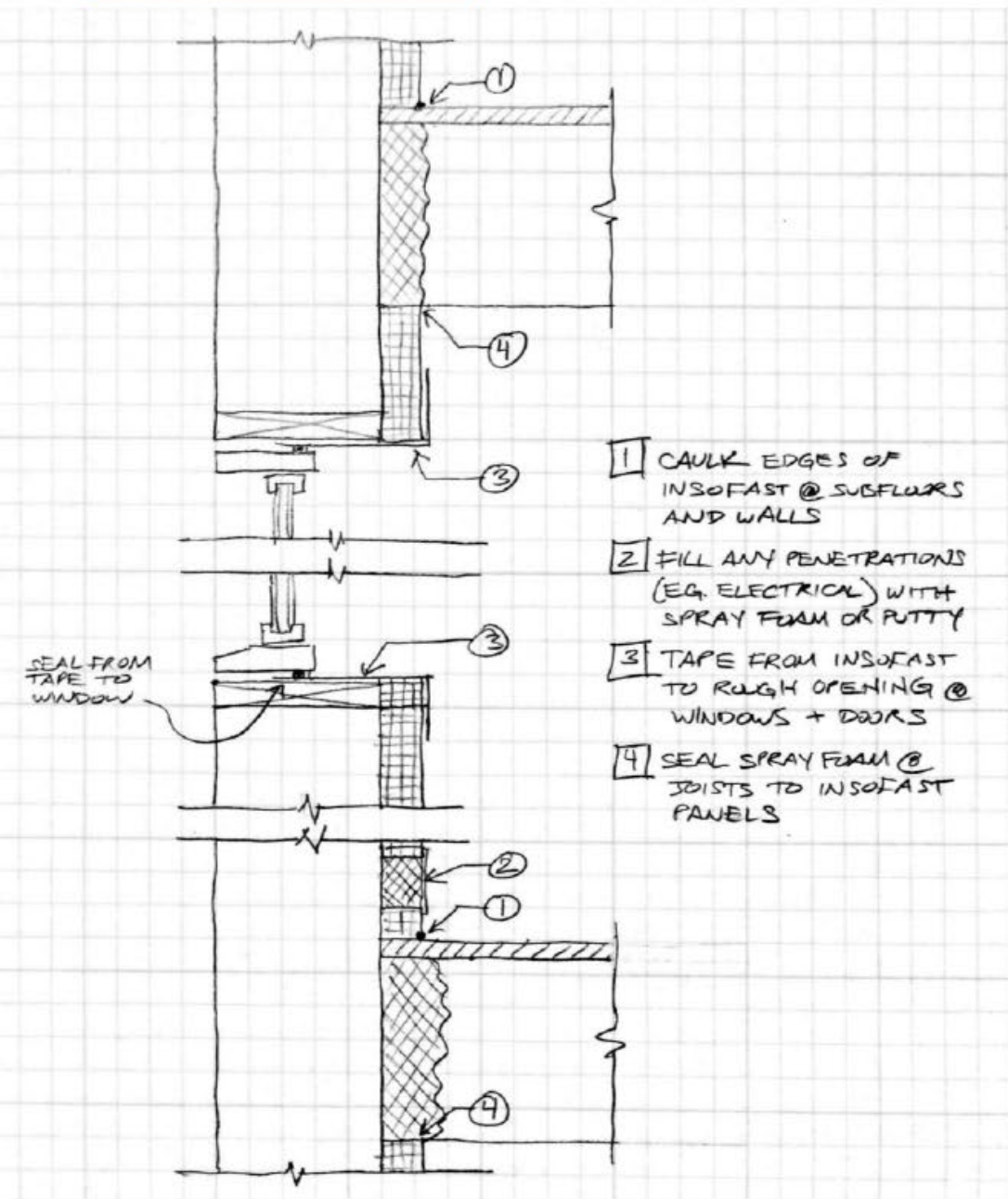
Outputs from Athena Impact Estimator



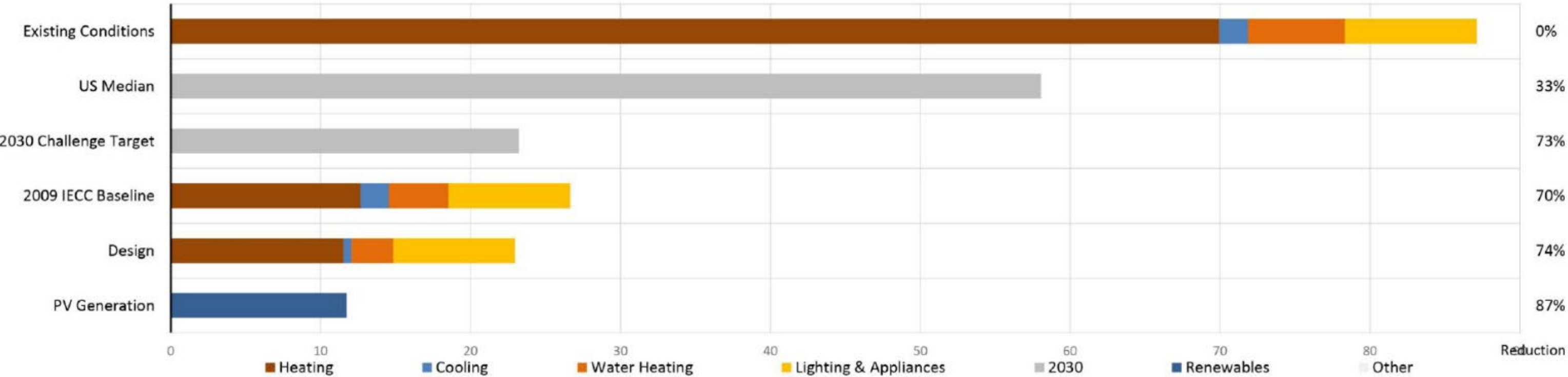
MYERS-HECKMAN RESIDENCE: Retrofit of 150-Year-Old Historic Home



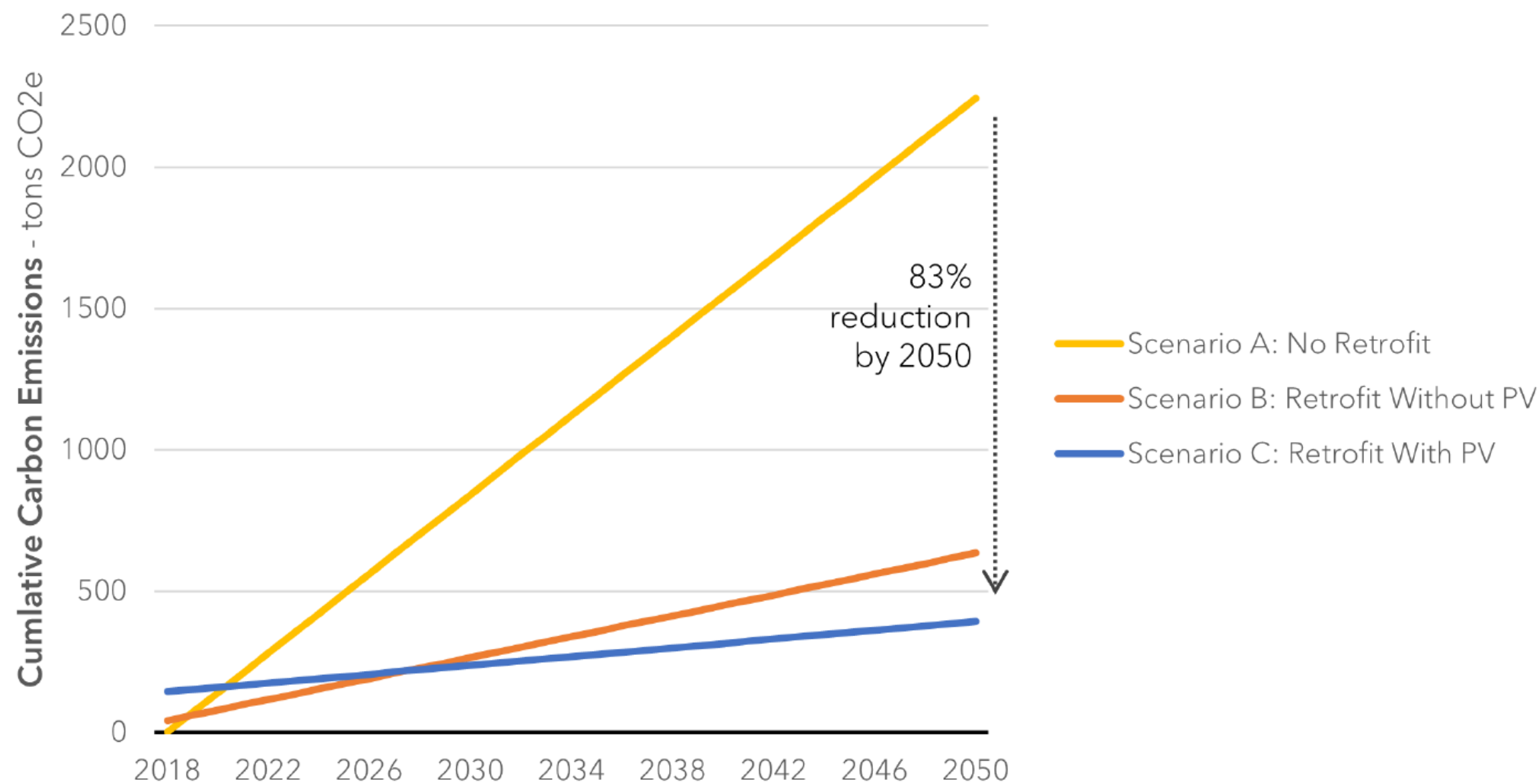
MYERS-HECKMAN RESIDENCE: Retrofit of 150-Year-Old Historic Home



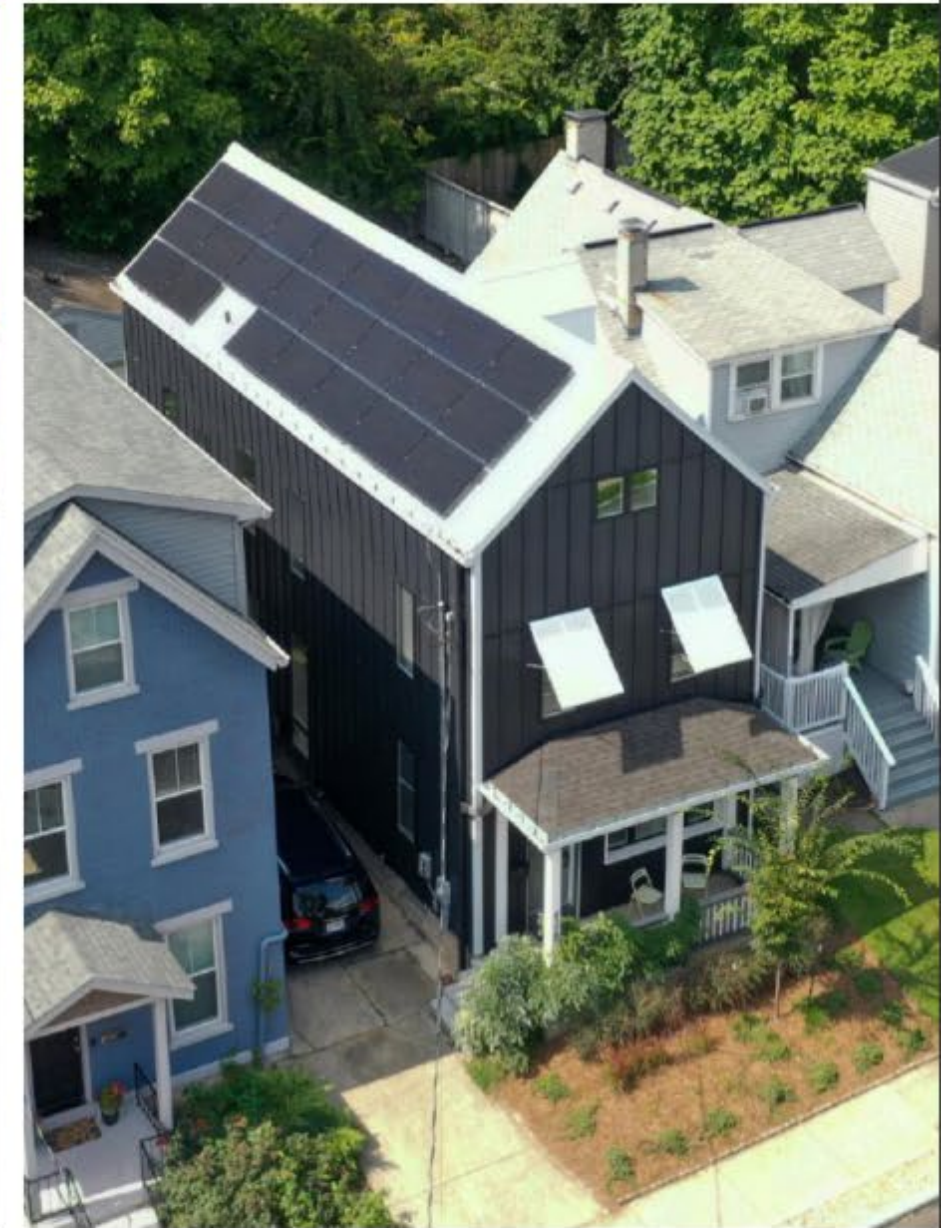
Impact: 87% reduction in energy use from pre-retrofit conditions



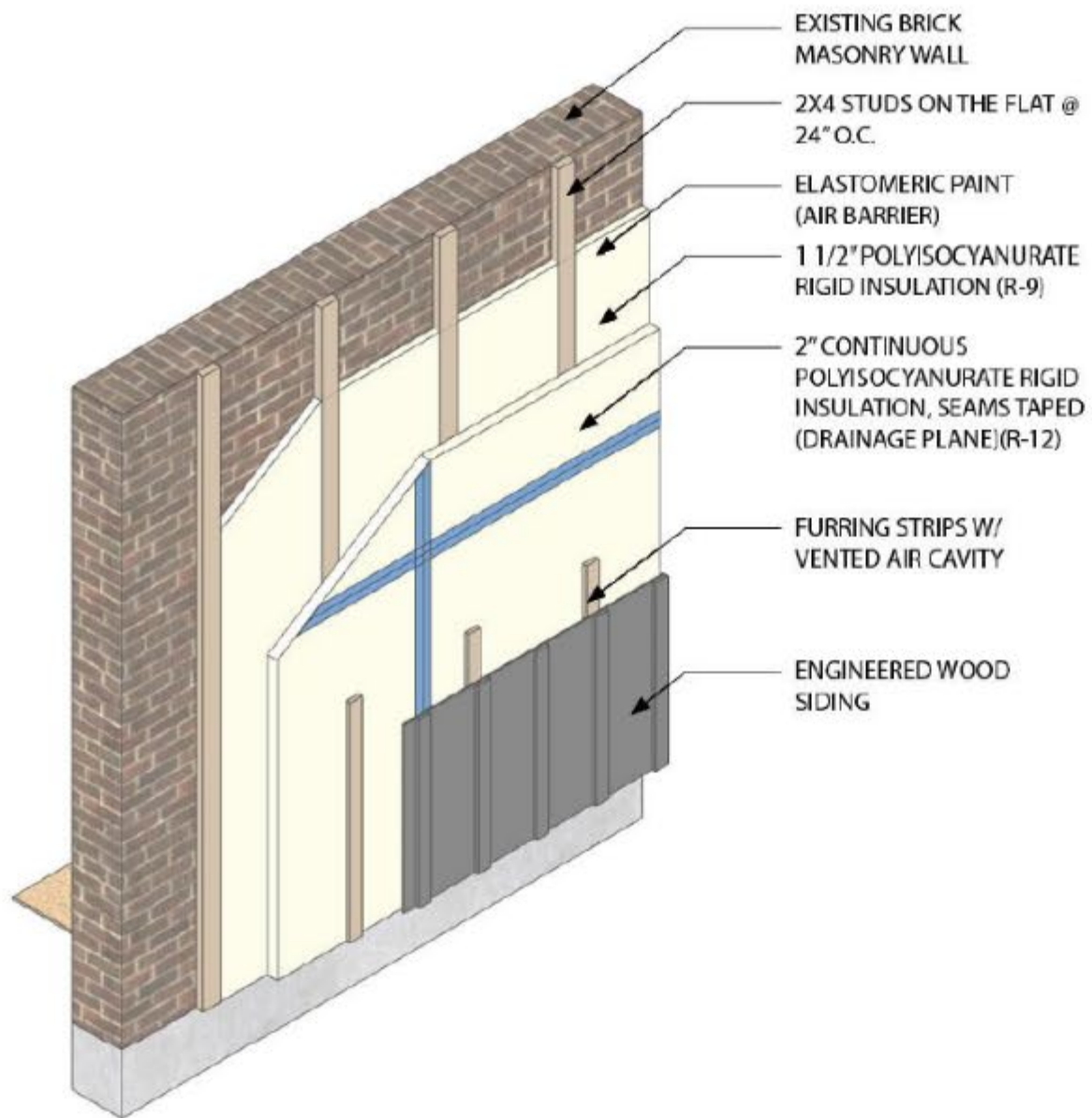
Impact: 83% reduction in carbon emissions compared to “no retrofit” scenario



MOOTHART RESIDENCE: Retrofit of 150-Year-Old Home



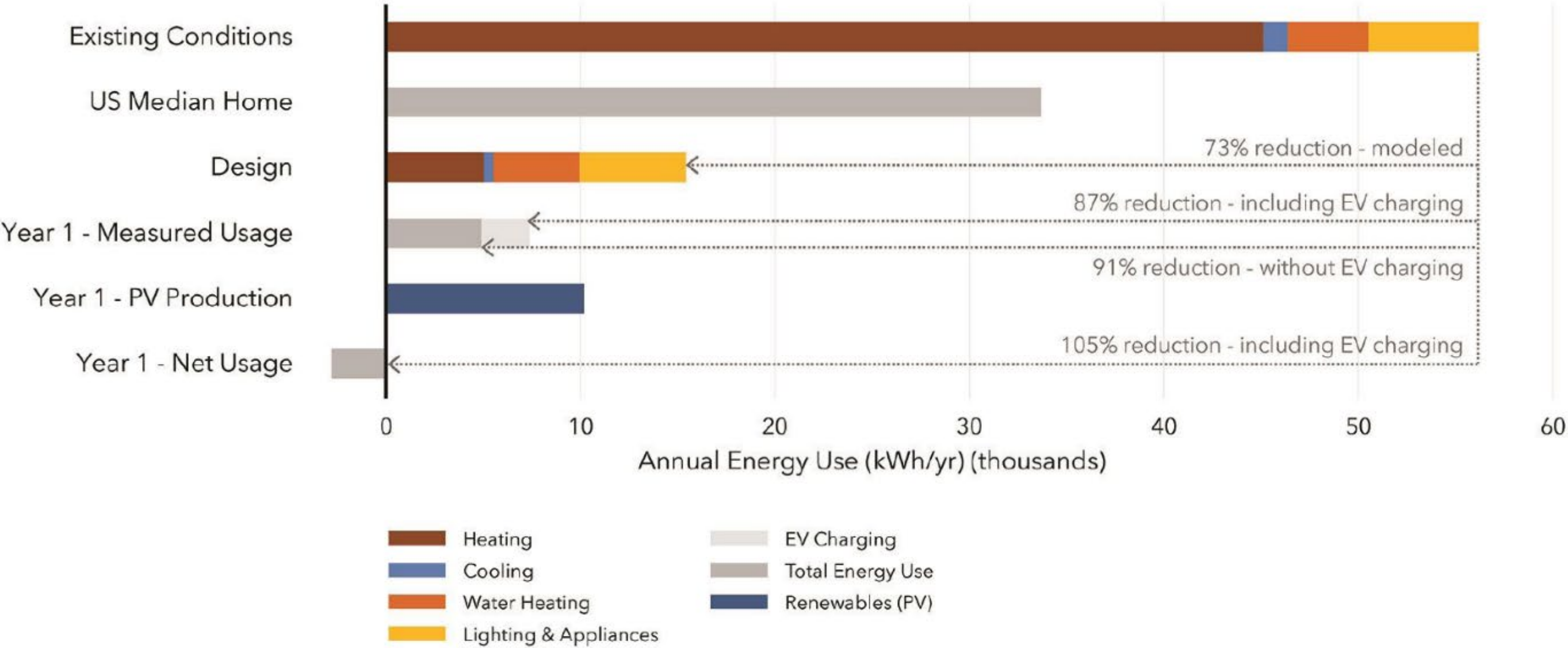
MOOTHART RESIDENCE: Wrapping the Home with Insulation



MOOTHART RESIDENCE: Interior Upgrades



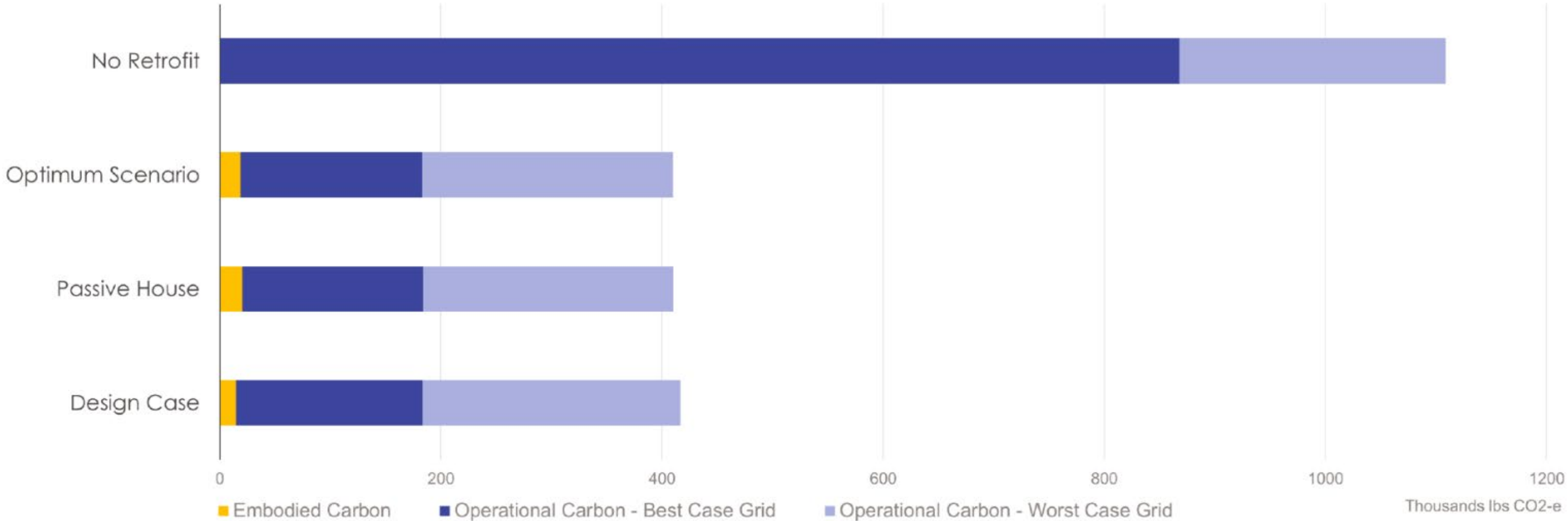
MOOTHART RESIDENCE: Net Positive Energy – Including Charging EV



Impact: Carbon Reductions



30-Year Carbon Emissions - Embodied + Operational



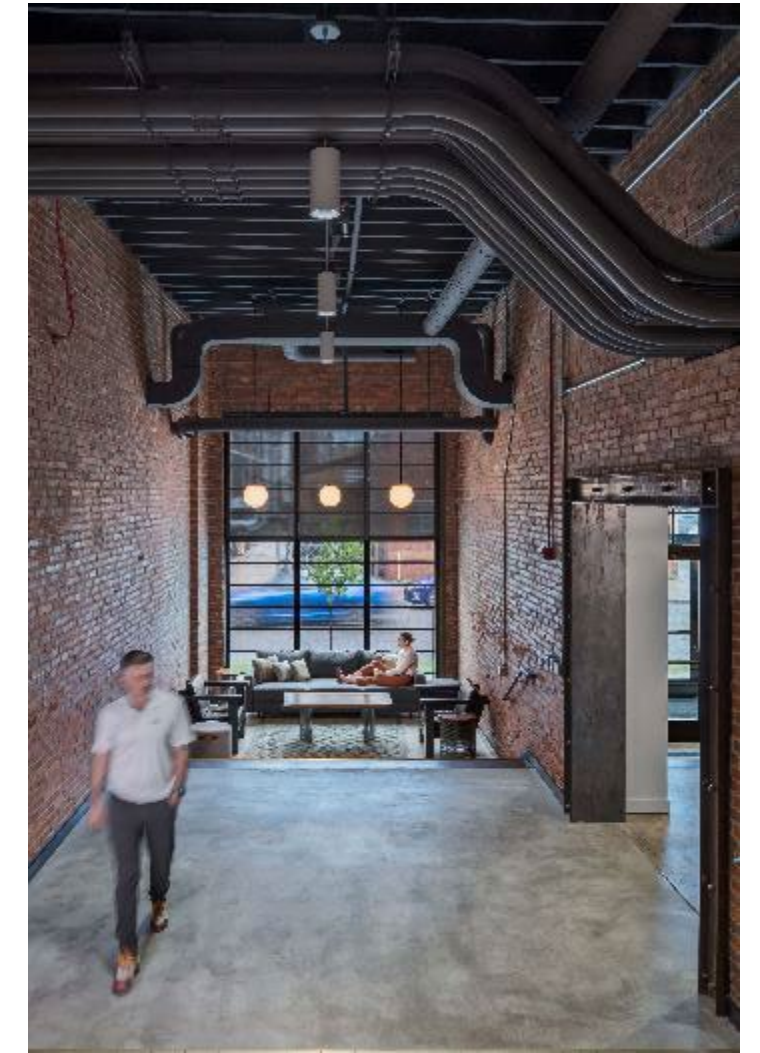
The Opportunity



Supporting Circularity in the Built Environment: *A Designer's Perspective*

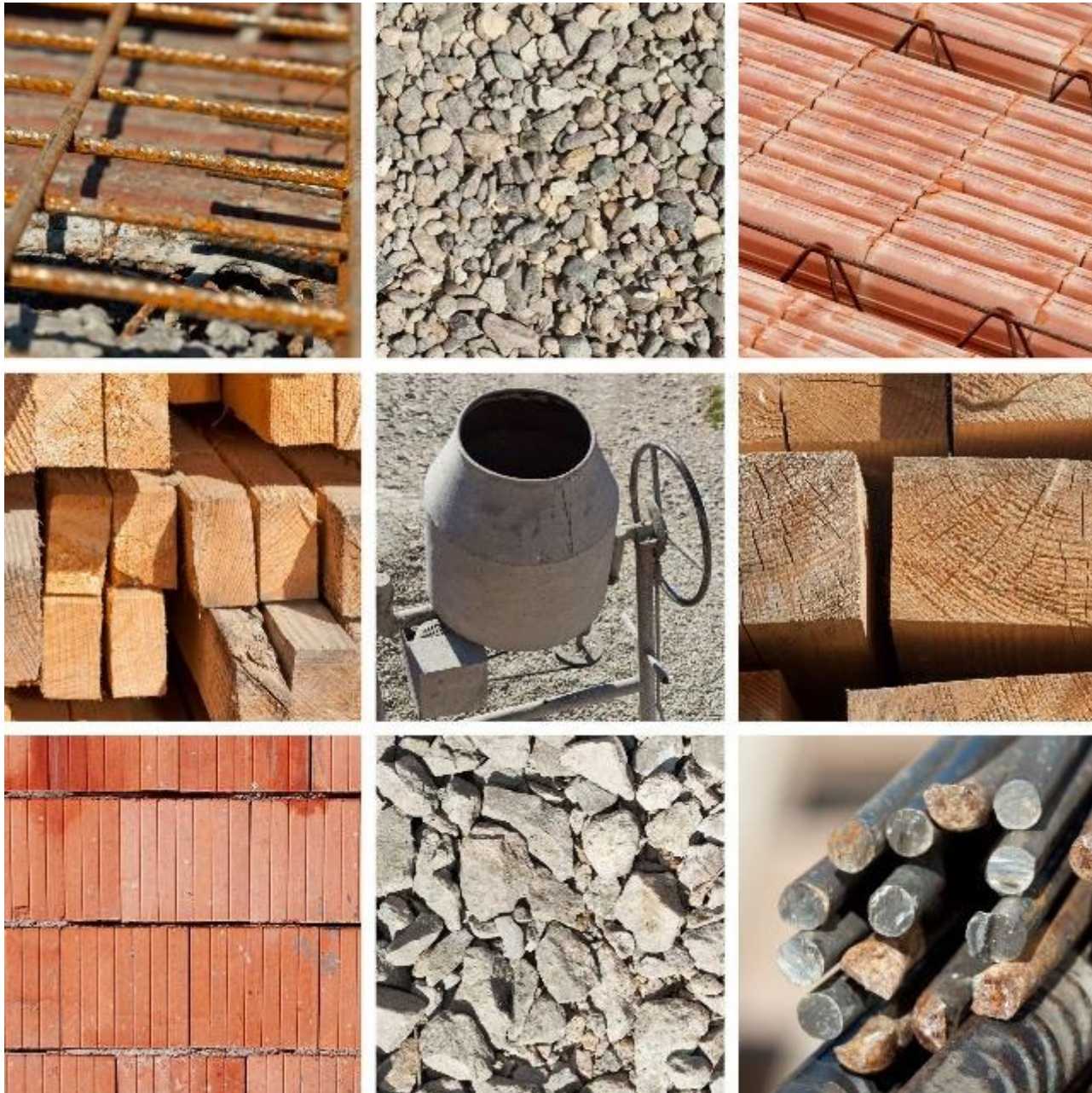
Olivia Morrison
NCIDQ, LEED Green Associate
Designer

vocon.



THE DESIGNER'S ROLE:

Frontline Engagement



- Shifting mindset from demolition to deconstruction
- Supply and demand involvement
- Value assignment
- Commitment to collaboration

A REDEFINED DESIGN APPROACH:

- 1. Build only what you need.*
- 2. Build with the right materials.*
- 3. Build efficiently.*
- 4. Build for long term value.*



TRAINING & DEVELOPMENT:

Internal Education Initiatives



- Sustainable design presentation series
- Site visits and field trips
- Mentorship programs
- Formalized employee training

Photo Credits:
Rebuilder's Exchange, Cleveland, OH
Vocon project site (Rocky River, OH)

STAKEHOLDER PRIORITIES:

The Importance of Alignment

- Establishing owner confidence
- Team workshops
- Understanding motivators & benefits
- Investment in quality materials & longer pre-design process

DESIGN PROCESS:

Schematics



- Existing materials inventory
 - On site material conservation
 - Urban mining / material banks
- Procurement and materials sourcing
 - Physical marketplaces vs digital platforms
 - Manufacturer stocks
- Schematic narrative
 - Early cost estimates

DESIGN PROCESS:

Design Development



- New product selection criteria
 - Biobased ingredients
 - Accessible circularity programs
 - Recycled content
 - Longevity
- Manufacturer program implementation
 - Coordination & documentation
- Design for disassembly
 - Modularity & simplification
 - Maintenance & repair

DOCUMENTATION AND EXECUTION:

Blueprints for Success

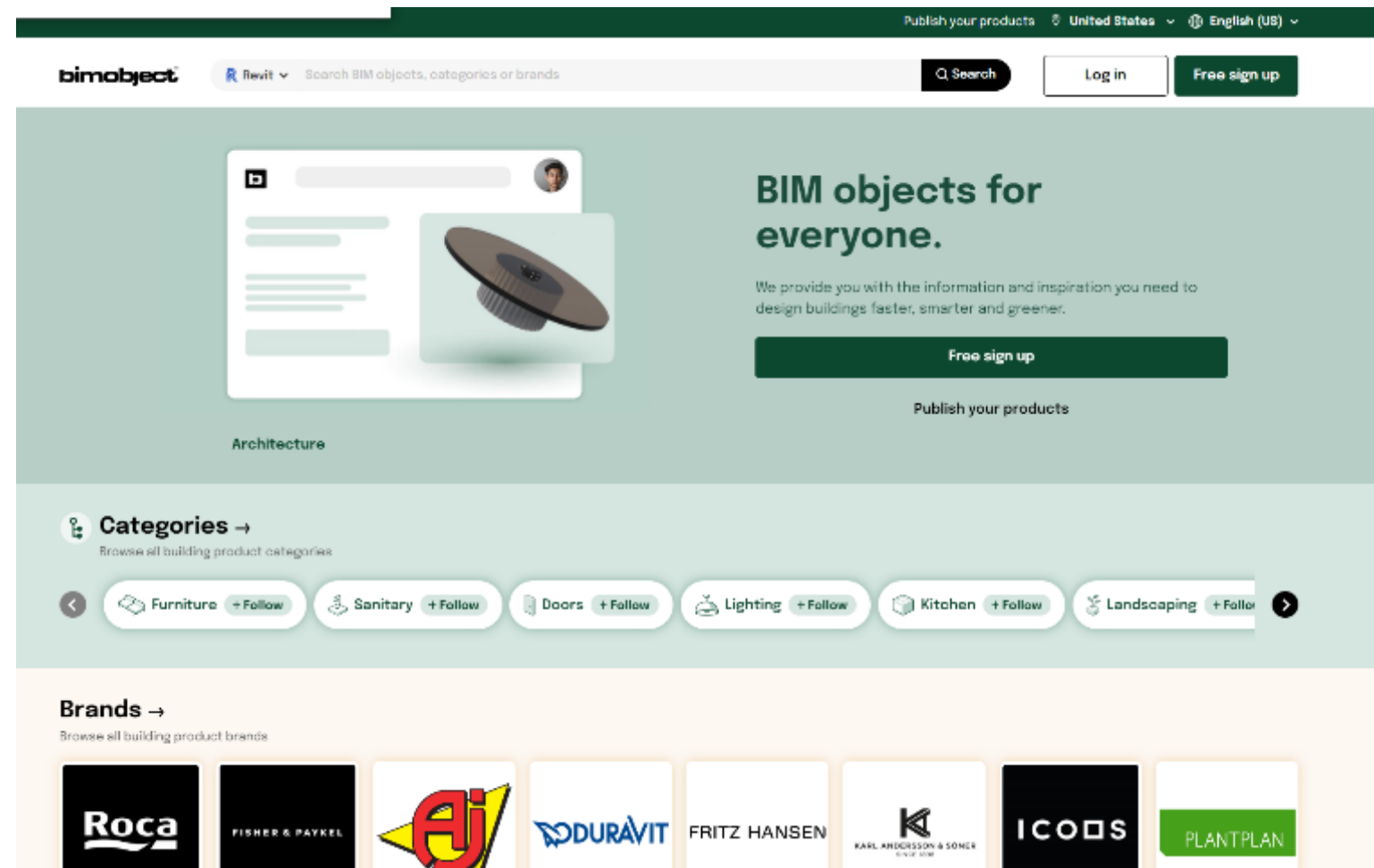


Photo Credit: Andrew Ellsworth,
Doors Unhinged; allforreuse.org/resources

- Templates and standards
 - Specifications & notes
 - Detailing
 - Bim coordination
- Materials reuse and deconstruction plan
- Construction administration & submittal process
 - Tolerance range
 - Submittal exemption

COMMUNITY IMPACT:

The Right to a Healthy Environment



- Landfill locations & community impacts
 - EPA's EJScreen tool
 - FencelineData mapping
- More visible logistics chain
 - Transportation route implications

ADVOCACY:

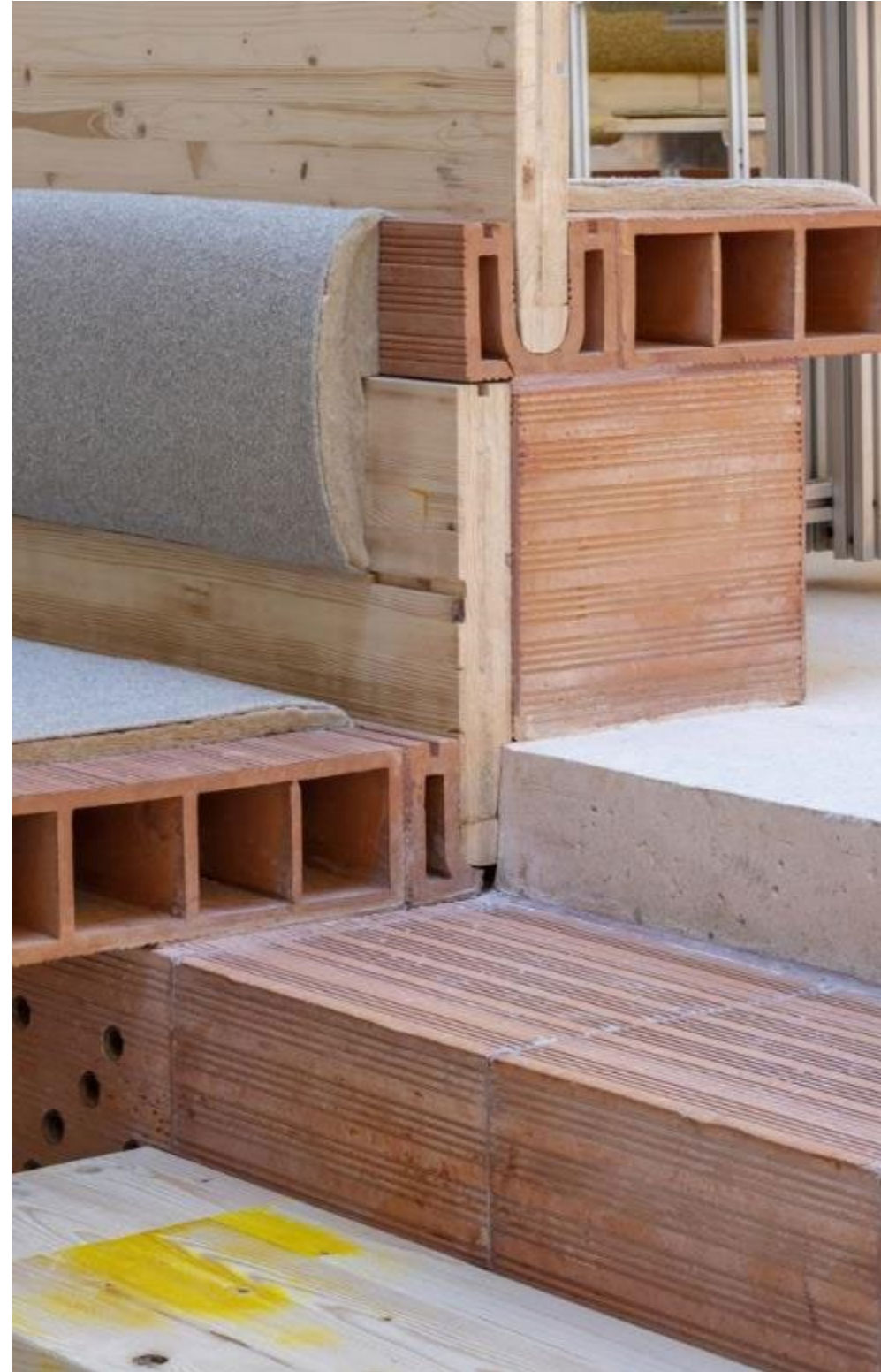
Community & Government Support



CITY OF SAN ANTONIO
**OFFICE OF HISTORIC
PRESERVATION**

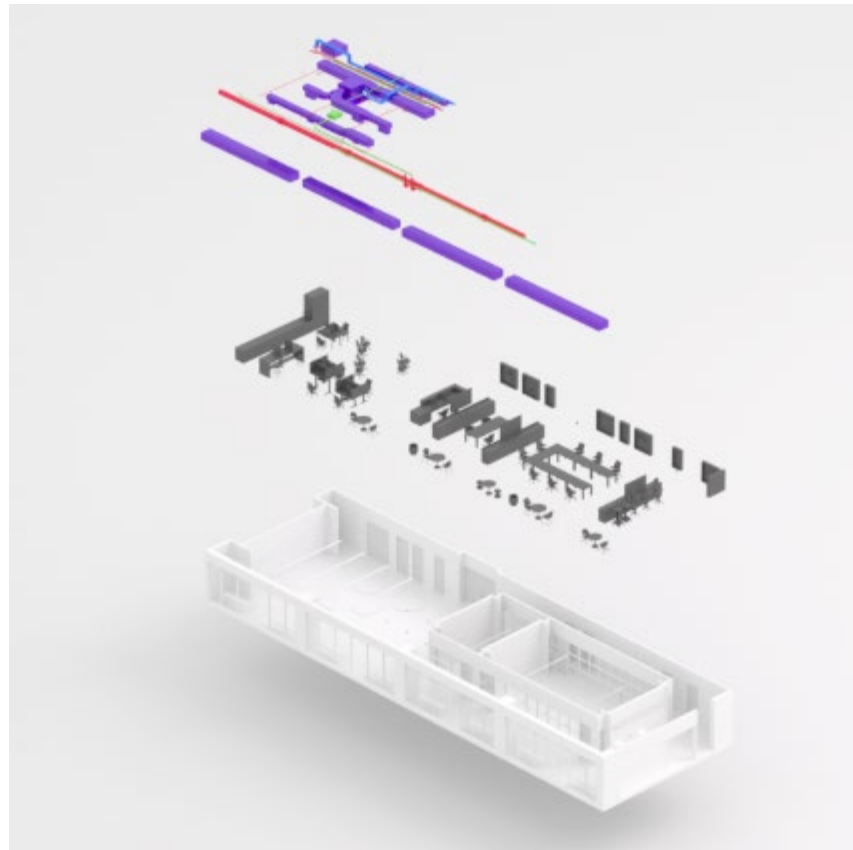


GENERAL CHALLENGES:



- Scalability and infrastructure
- Client & designer buy in / aesthetics
- Contractor experience & qualifications
- Policy gaps & incentives

REUSED MATERIAL CHALLENGES:



- Unpredictable availability
- Code limitations & warranties
- Standardized evaluation & material passports
- Specific material limitations

Photo Credits: Matterport, Adobe Stock

INDUSTRY RELATIONSHIPS:

Collaboration, Partnerships, & Commitments



- Aligned professional network
 - Good Future Design Alliance
 - Build Reuse
 - 2030 Districts
- Frameworks
 - Mindful MATERIALS
 - AIA Materials Pledge
 - Interior Design Pledge for Positive Impact

Building Material Reuse & Pushing the Circular Economy in Construction



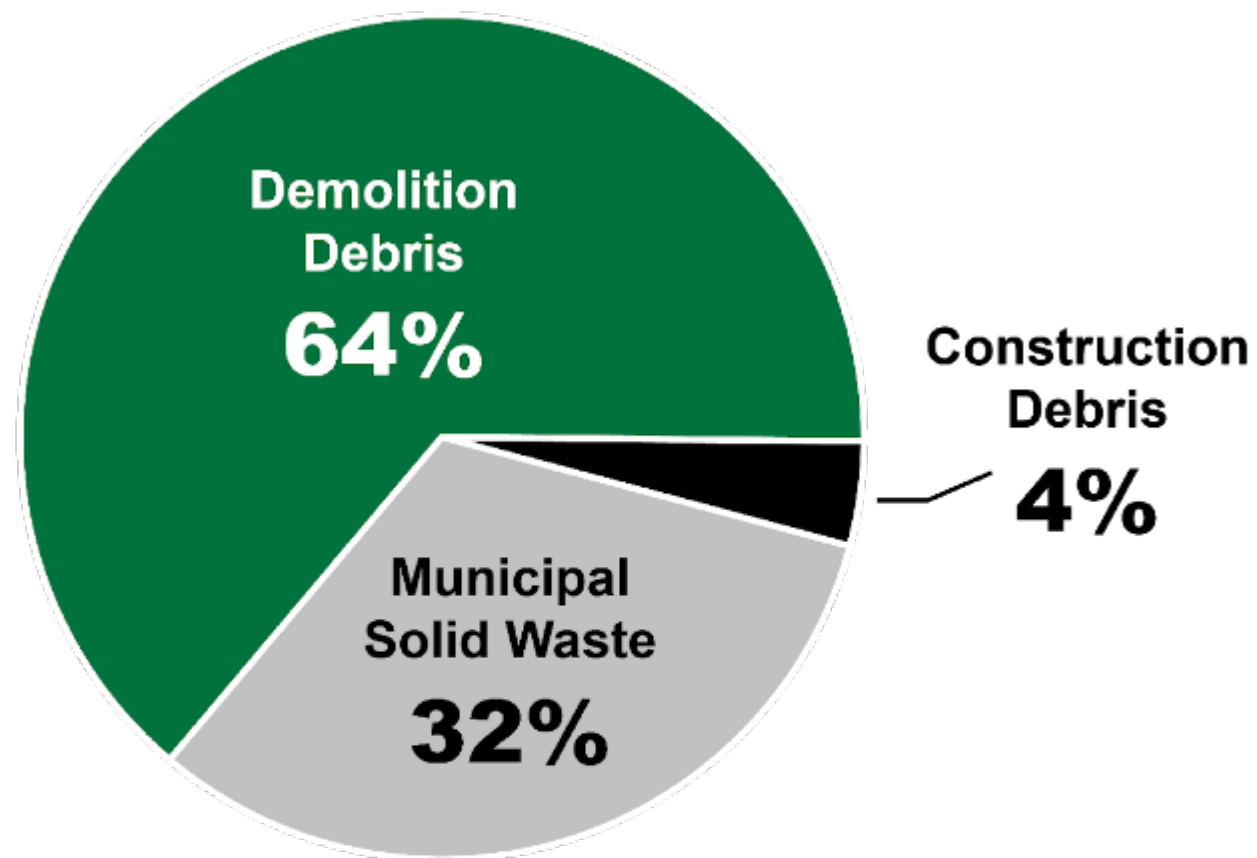
PATTY LLOYD

LEED Fellow, WELL AP, LFA
DIRECTOR OF
SUSTAINABILITY

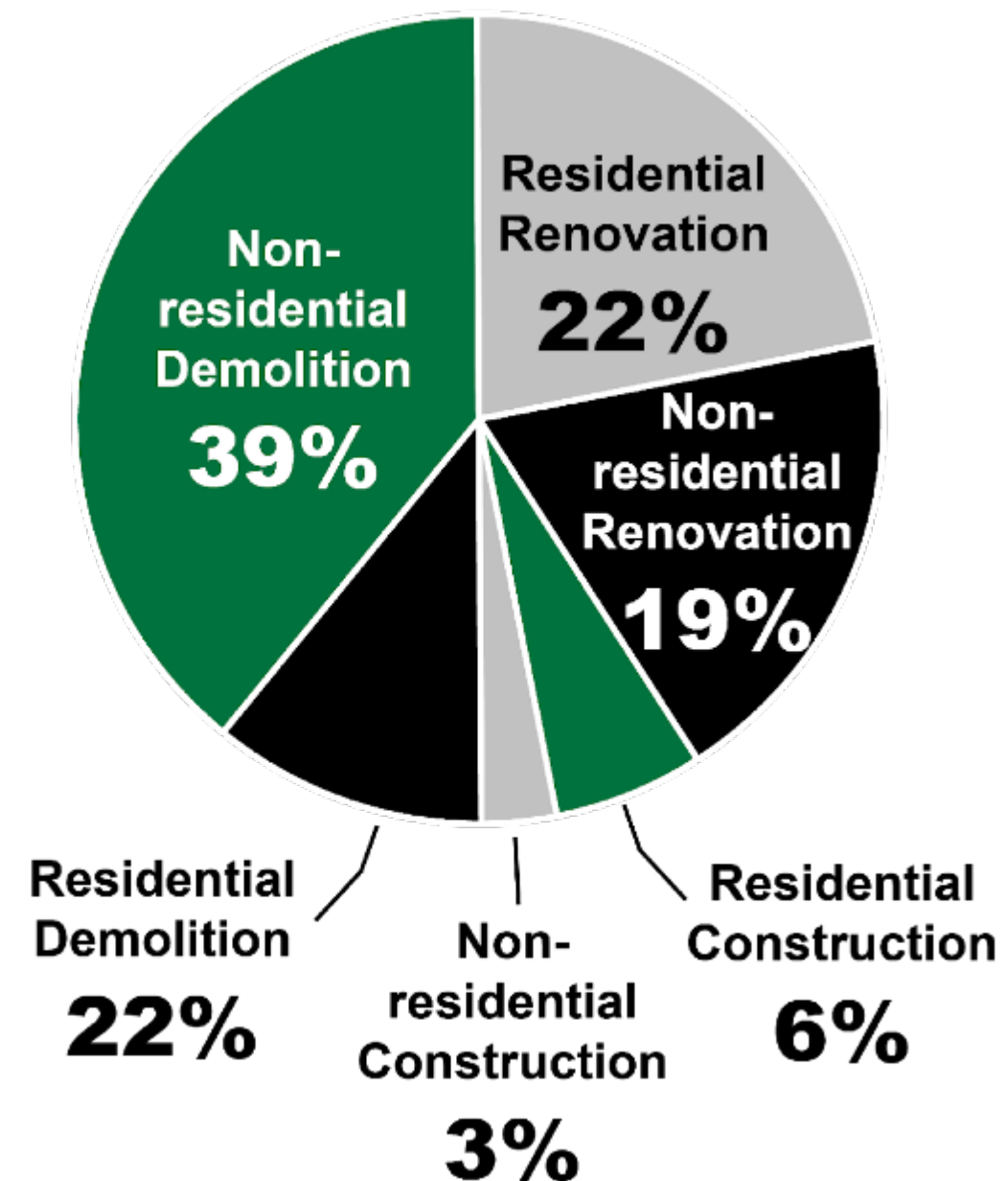


IDENTIFYING THE PROBLEM & RETHINKING THE WASTE HIERARCHY

US Waste Generation by Sector & Activity

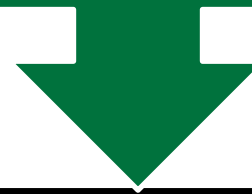


C&D Debris Generated by Each Building Sector

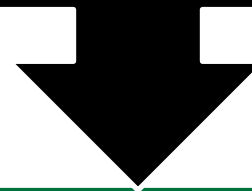


IMPACT OF TAKE / MAKE / WASTE MODEL

Resource extraction: The construction industry is the largest user of natural resources with 101 billion tons of global material extracted annually.



Waste Generation: 600m tons of Construction & Demolition debris were generated in the US in 2018, whereas 292.4m tons of municipal solid waste was generated in that same time frame..



Future C&D Waste Generation: Over the next 40 years total building stock is estimated to double, while nearly 1/3 of building stock will come down.

SALVAGE ASSESSMENTS

Deconstruction Rapid Assessment Tool



2b. Damage & Deterioration

The Damage & Deterioration section is intended to provide an indication of the condition of materials in the structure. If, for example, there are large portions of the roof missing and clear exposure to the elements or missing windows, the chances of materials being damaged and/or deteriorated is increased, thereby making deconstruction unlikely. This is very important in understanding whether deconstruction will be a viable option. For projects in which the structure was recently occupied and in habitable condition, this section may have diminished relevance.

DAMAGE & DETERIORATION					
Major cracking of brick, wood rotting:			Yes	No	
Broken or missing windows:			Yes	No	
Missing brick and siding:			Yes	No	
Roof damage:	Small open hole	Large open hole(s)	Portion of roof missing	Significant portion or entire roof missing	
Evidence of major fire damage:	1 (little)	2	3	4	5 (lots)
Evidence of major water damage:	1 (little)	2	3	4	5 (lots)
Are gutters/downspout operable to control water?			Yes	No	

2c. Materials Inventory

The materials inventory includes the types and quantities of building elements commonly found in residential structures. This information is intended to provide estimates of effort required to deconstruct and potential revenue from deconstructed materials.

MATERIALS INVENTORY					
Roof type:	Flat	Pitched			
Siding type:	Brick	1 (little)	2	3	4
	Wood	1 (little)	2	3	4
	Stone	1 (little)	2	3	4
	Vinyl/Synthetic	1 (little)	2	3	4
	Aluminum	1 (little)	2	3	4
	Other:	1 (little)	2	3	4
Wood flooring (number of rooms):	1	2	3	4	Specify:
Have additional layers of flooring been adhered to the wood in the past?	Yes	No			
Are dimensional ceiling or floor joists observed? (can be viewed from basement or attic)	Yes	No			
Dimensional lumber larger than 4x4:	Yes	No			
Are walls plaster or drywall? (total should equal 100%)	Plaster	Partly (< 25%)	Some (25-50%)	Mostly (50-99%)	All (100%)
	Drywall	Partly (< 25%)	Some (25-50%)	Mostly (50-99%)	All (100%)
Crown moulding	None	Some	A Lot		
Casing around doors and windows (number of rooms)	1	2	3	4	Specify:
Baseboard moulding (number of rooms)	1	2	3	4	Specify:
Chair railing moulding (number of rooms)	1	2	3	4	Specify:
Foundation:	Monolithic concrete	Concrete block	Combination, specify:		
Basement:	Yes	No	Partial		

BUILDING MATERIAL SALVAGE ASSESSMENT

Names of Inspectors

Date of Inspection

Address

FINAL ASSESSMENT AND JUSTIFICATION

BUILDING AND SITE SPECIFIC DETAILS

YEAR BUILT

HOME SQUARE FOOT

GOOD STAGING AREA

STORIES

BEDROOMS

BATHROOMS

SITE HAZARDS

HAZARDS

EXTERIOR TRASH

TREES AND FOLIAGE

OTHER:

NONE

SOME

LOTS

NOTE:

PERCEIVABLE BUILDING HAZARDS

HAZARD

ROOF DAMAGE

WATER DAMAGE

FIRE DAMAGE

ASBESTOS

LEAD PAINT

INTERIOR TRASH

OTHER

NONE

SOME

LOTS

Notes:

SALVAGEABLE MATERIALS

WOOD USE

OLD GROWTH

MID CENTURY

RECLAIMED

PAINT GLUE

Other

FLOORING

FRAMING [x]

Floor JOISTS [X]

SUBFLOORING [x]

Roof TRUSSES [x]

Siding [x]

OTHER?

OTHER SALVAGEABLE FEATURES

Seattle Department of Construction & Inspections

Salvage Assessment

Project Number

Project Address

Owner/Contact Name

Salvage Verifier (if required)

Whole Building Removal (demolition)

Alterations

Nonresidential Project

Residential Project

Contact Name

Company

Phone

A salvage assessment is required for all whole building demolition projects and projects that involve alterations valued at more than \$75,000 and/or where the area of work is greater than 750 square feet.

☐ By checking this box, I have determined I do not need to fill out this form because:

- the project does not impact an existing building, such as construction of a new detached accessory dwelling unit or backyard cottage,
- the permit value is less than \$75,000, or
- the area of work is less than 750 square feet.

This exception does not apply to demolition permits.

This form must be filled out by:

The Owner or Owner's Representative when...	The project scope involves additions or alterations
	Material removed from a project is going to be reused on-site or at an alternate project site <ul style="list-style-type: none">Project #/Address
A Salvage Verifier when...	The project includes whole building removal (Demolition)

A salvage verifier is a person meeting one of the following criteria:

- An established salvage and reuse retail company
- A licensed contractor specializing in deconstruction
- A demolition company with knowledge of local and current salvage retail markets

A list of possible salvage verifiers may be found through resources such as The Northwest Building Salvage Network: <http://nbsnwseattle.org/>

A salvage verifier may use this or an alternate form

ONLY a salvage verifier may check off this box if there is nothing of value to salvage ☐

Salvage Assessment Matrix

Use the matrix below to identify all building materials impacted by demolition that could be salvaged and reused ON or OFF-SITE instead of being sent to a landfill or recycled.

Building	Specific Material	Quantity	Notes
Cabinets	Solid Wood (with back panel)		
	Other (with back panel)		
Carpet	Tile		
	Roll		
Doors	Interior		
	Exterior		
	Garage		
Flooring	Solid Floor		

700 Fifth Avenue, Suite 2000 | PO Box 34019 | Seattle, WA 98124-8019 | 206-684-8600 | seattle.gov/udci

delta institute

68

Image Credits: Seattle Department of Construction & Inspections: (n.d.), seattle.gov/Documents/Departments/SDCI/Forms/SalvageAssessment.pdf; Delta Institute (2018), delta-institute.org/publication/deconstruction-go-guide; EPA (n.d.), <https://www.epa.gov/sites/default/files/2015-07/documents/drat-instructions.pdf>

MATERIALS RECOVERY THROUGH DECONSTRUCTION

SPECTRUM OF DECONSTRUCTION

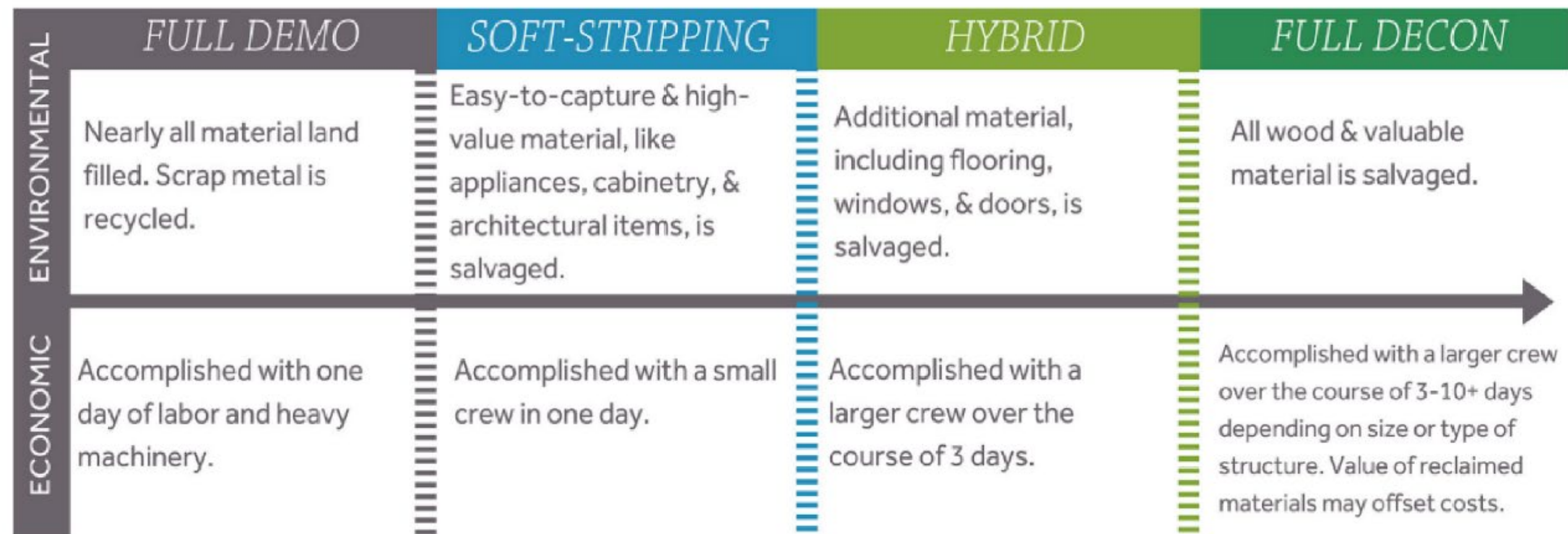


Figure 2: A variety of approaches can be used in accomplishing deconstruction and demolition tasks.

“Deconstruction is a new term to describe an old process—the selective dismantling or removal of materials from buildings prior to or instead of conventional demolition.”

U.S. Environmental Protection Agency

OPPORTUNITY: SURPLUS

- Surplus – another feedstock into the materials reuse stream
- Isn't the same as salvage
- Product purchased for construction but never installed
- New not Used!!
- Materials Data available
- New in Box




San Francisco Surplus Building Products Reduction & Distribution Study

EXAMPLES OF SURPLUS & SALVAGE



Extending the Life Cycle of a Material = Environmental & Social Benefit



ReStore
Habitat for Humanity of Northern Fox Valley

800 N. State Street, Elgin, Illinois 60123
847-742-8805 www.restoreelgin.org

Date: 6/16/20
Contact Name: Andrew Roy
Company Name: Leopardo
Address: 5200 prairie stone parkway
City, State, Zip: Hoffman Estates IL 60142
Phone: 1-847-783-3000
Email: _____

☐ Residential
☒ Business

☒ Drop Off
☐ Pick Up

____ Yes I'd like to receive information regarding updates on Habitat for Humanity, volunteer opportunities, specifics about new arrivals, special sales, offers, and coupons.

Thank you for your in-kind donation to Habitat for Humanity of Northern Fox Valley's ReStore.

The goals of the ReStore are to keep usable building materials out of the local landfills and sell them at low prices to generate revenue for the construction of more Habitat homes in our service area.

Habitat for Humanity of Northern Fox Valley has constructed or rehabbed more than 100 homes in Carpentersville, Elgin and St. Charles. Habitat homes are sold at no profit, financed with zero-interest loans. The homeowners' monthly mortgage payments are then pooled together and used to build more houses for more families.

Thank you again for your support. Your generous donation helps us build more homes.

Thank you so much for your generous donation to Rebuilding Exchange! Your donation helps us to continue our mission of diverting materials from the waste stream and supports our job training and education programs. We couldn't do this work without you!


This form acknowledges the receipt of donations to Rebuilding Exchange.

The goals of the ReStore are to keep usable building materials out of the local landfills and sell them at low prices to generate revenue for the construction of more Habitat homes in our service area.

Your generous donation helps us build more homes.

Your generous gift will help provide affordable housing for Indiana's low to moderate income people.

Asset Recycling
"A Division of Youth Fair Chance, Inc."
701 North Holl Road Suite 1
Indianapolis, IN 46222
Phone# 317-635-7774



Asset Recycling
Youth Fair Chance, Inc.

Leopardo Const.
5200 Prairie Stone
PKW
Hoffman Estates
IL 60142

Date: Nov 30, 2021

Dear Donor:

Thank you from everyone at Asset Recycling, Inc. for your donation of:

- 1 truck load ceiling tiles
- 1200² feet
- ceiling
- 2x2 tiles
-

See attached list. U/A

Your generous gift will help provide affordable housing for Indiana's low to moderate income people.

ALL FOR REUSE: REUSE ECOSYSTEM MAP

REUSE ECOSYSTEM MAP

Connecting the dots across the design and construction industry toward an inclusive circular economy.

REUSE

Suppliers of salvaged, used or refabricated building materials

DECONSTRUCTION

Organizations that offer services to salvage, soft-strip, or deconstruct

HAULING / WAREHOUSING

Entities supporting the logistics of moving and storing products

GOVERNMENT / PUBLIC AGENCY

Examples of jurisdictions with policies or enabling infrastructure in place

NETWORK / RESOURCES

National member organizations, digital platforms, and materials databases

REMANUFACTURING / RECYCLING

Manufacturer take-back programs, fabricators, and targeted recycling

TRAINING / EDUCATION

Workforce development in the field and programs in academic institutions

CONSULTING / RESEARCH

Resource experts specializing in material reuse or circular economy

LEED & Reuse v5

LEED BD+C: New Construction • v5 - Public Comment 1

Building and Materials Reuse

Materials and Resources

Possible 3 Points

Share on

All credits

LanguageResources and tips

Intent

To reduce embodied carbon, keep materials in circularity, reduce demand for virgin material sourcing, preserve cultural resources and histories, and foster markets for reuse materials.

Requirements

Demonstrate reduced environmental effects during initial project decision-making by reusing existing building resources and fostering markets for reuse materials. Achieve points through building and/or material reuse.

Option 1. Building Reuse (1-3 points)

Maintain the existing building structure (including floor and roof decking) and enclosure (the exterior skin and frame, window assemblies and nonstructural roofing materials). Calculate reuse of the existing project area according to Table 1. Historic, abandoned, or unsafe buildings: Portions of buildings deemed structurally unsound or hazardous cannot be used in credit calculations.

Table 1. Points for Reuse of Existing Building Structural Elements

Percent of existing walls, floors, and roof reuse by project area	Points
20%	0
35%	1
50%	2
65%	3

AND/OR

Option 2. Material Reuse (1-2 points)

Salvage Assessment: For projects with deconstruction or demolition in scope, conduct deconstruction or demolition activities and identify materials that can be retained onsite for offsite reuse contribute to Path 1. Materials retained onsite contribute to Path 2. Assess Off-site Procurement of Salvaged or Reused Materials: For all projects, assess opportunities from offsite reuse and/or salvage sources.

Path 1: Salvaging Materials

LEED BD+C: New Construction • v5 - Public Comment 1

Construction and Demolition Waste Diversion

Materials and Resources

Possible 2 Points

LanguageResources and tips

Intent

To reduce construction and demolition waste disposed of in landfills and incineration facilities and the environmental impacts of manufacturing new materials and products, including embodied carbon. To delay the need for new landfill facilities that are located in frontline communities and create green jobs and materials markets for building construction services.

Requirements

Develop and implement a construction and demolition materials management plan and achieve points through diversion and recycling. Waste diversion and recycling calculations must be by weight. If volume is provided for some materials, use an approved volume-to-weight conversion factor. Exclude excavated soil, land-clearing debris, and hazardous waste from calculations. Any materials sent to a commingled recycling facility for processing must take the facility average recycling rate and any materials destined for alternative daily cover (ADC) or incineration/energy recovery must be included as waste (not diverted). Divert at least 35% of waste by employing best practice strategies like reuse/salvage, manufacturer take-back programs, source-separation (with dedicated recycling) of specific materials, and targeting of high value materials like carpet, ceilings, gypsum board, and furniture. Points are awarded according to Table 1.

Table 1. Points for C&D Diversion. Select any criteria up to a total of 2 points:

Thresholds	Points
Divert 35% of all construction and demolition waste materials AND Source-separate and recycle three materials	1
Divert 50% of all construction and demolition waste materials AND Use third-party verified commingled recycling facilities OR Source-separate and recycle five materials OR Source separate and recycle at least 2 targeted materials: Carpet, ceilings, gypsum board, or furniture	2

*Minimum quantities are required for source separated materials.

PROJECT TYPE VARIATIONS:
For projects with incomplete or speculative spaces:

LEED BD+C: New Construction • v5 - Public Comment 1

Optimized Building Products

Materials and Resources

Possible 5 Points

Share on

All credits

LanguageResources and tips

Intent

To encourage the use of products and materials for which life-cycle information is available and that have environmentally, economically, and socially preferable impacts. To reward project teams for selecting products from manufacturers who have optimized their products across multiple impact areas.

Requirements

Select nonstructural building products that achieve multiple optimization criteria across five impact areas: climate health, human health, ecosystem health, social health & equity, and circular economy. Figure 1 illustrates how eligible multi-attribute product documentation. All eligible product documentation must include:

• Column A lists the eligible types of product documentation or certification is valued by the building industry or certification organization.

• Columns B-F indicate how each product documentation or certification is valued by the building industry or certification organization. The values in these columns represent a "multi-attribute score" for the product. The values are based on the number of products, cost, area, or volume, depending on the credit option selected. A single product may only claim one multi-attribute score per impact area (B-F). Some products may have one single attribute, in which case, the maximum values from the columns B-F are used. In this case, the maximum values from the columns B-F are used. In this case, the maximum values from the columns B-F are used. In this case, the maximum values from the columns B-F are used.

• For example, if a product has a Product-Specific Type III EPD score (multiplier) for the product, up to a maximum of score of 5.0. Not all products will have a score of 5.0. For example, if a product has a Product-Specific Type III EPD score (multiplier) for the product, up to a maximum of score of 5.0. Not all products will have a score of 5.0.

• Column A: Climate Health - 1.0 score (maximum of 1.0 score from Cradle to Cradle Silver)

• Column B: Human Health - 1.0 score from Cradle to Cradle Silver

• Column C: Ecosystem Health - 1.0 score from Cradle to Cradle Silver

• Column D: Social Health and Equity - 0.5 score from Cradle to Cradle Silver

• Column E: Circular Economy - 0.5 score from Cradle to Cradle Silver

Figure 1. Optimized Product Valuation by Eligible Product Documentation

A	Optimized Product Impact Areas (Multi-Attribute Score)				
	B	C	D	E	F
Eligible Product Documentation					
Multi-attribute Certifications					
Cradle to Cradle: Bronze	0.5	0.5	0.5	0.5	
Cradle to Cradle: Silver	0.5	1	1	0.5	
Cradle to Cradle: Gold or Pt.	1	1	1	1	0.5
BIFMA e3 / level		0.5	0.5		1
Living Product Challenge	1	1			
Living Product Challenge w/ MHI	1	2	1		
FSC Certified			1.5	1	
SFI Chain of Custody			1	0.5	
Reused materials			1		1
Single Attributes					
Industrywide EPD	0.5				
Product-Specific Type III EPD	1				
Optimized EPD, Tier 1 (15% better)	1.5				
Optimized EPD, Tier 2 (30% better)	2				
HPD: pre-checked for LEED		0.5			
HPD: third party verified		1			
Optimized HPD with verification		2			
Declare		0.5			
Declare: third party verified		1			
Global Green TAG PhD		0.5			
Product Lens		1			
Green Seal Certified		1.5			
GreenCircle Closed-Loop certified					2
TRUE Zero Waste manufacturer					1
EPR: carpet, gyp.board, furniture, ceilings					1
Recycled content					%
Biobased - nonwood					%

Option 1: Product Disclosure and Optimization from All Product Categories (1-2 Points)

Select and install nonstructural materials that are optimized across multiple impact areas according to Figure 1. Products can come from any category so long as they are permanently installed. Products with eligible documentation are valued for their multi-attribute score, up to a maximum score of 5 per unique product. See Equation 1 for an example of how to calculate multipliers for a unique product.

35 <https://www.fsc.org/en-uk/business-area/fsc-certificate-types/project-certification>
36 <https://www.fsc.org/en-us/market/green-building/fsc-project-certification>

Product Name
Manufacturer Name
City, State/Province, Country
Life Expectancy: 100 YEARS
End of Life Options: Recyclable (42%), Landfill

Ingredients:

Ingredient One (Location, ST), The Second
(Location, ST), Next Ingredient
(Location, ST), **Living Building Challenge Red List**, Different Part of the Product, Another
Concern, Yet Another **US EPA Chemical**
Element, Piceifolliwhole, Non-toxic
of Cocobion, ThirdFromTheEnd, **ECHA**
REACH Substance of Very High Concern, Last
Ingredient.

*LBC Exception Applied IT-ET PVC B Code ---

X00X-0000 Issued 12/2/00

Certification Status ☒ LBC Rad List Compliant
 ☐ LBC Rad List Froa
 ☐ Other

INTERNATIONAL LIVING FURNING INSTITUTE® www.ili.org
MANUFACTURER IS RESPONSIBLE FOR LABEL ACCURACY

What am I doing to advance BMR?

ENVIRONMENTAL GOALS

- Reduce Carbon Emissions related to energy and fuel use on projects
- Reduce embodied carbon on select projects
- Divert usable waste from projects into salvage or reuse stream
- Implement consideration of water quality and conservation into jobsite operations and use water wisely on projects

13. DIVERT USABLE MATERIAL FROM WASTE STREAM TO REUSE STREAM

Alignment: Goal 3 - Divert usable waste from projects into salvage or reuse stream.

Intent: Over 25% of landfill waste in our area is comprised of CD&D waste, a significant percentage of which are usable materials that have not reached the end of their useful life. Donation of usable materials resultant from our jobsites to non-profits or other entities is both socially and environmentally responsible.

Implementation: This credit often involves coordinating with the demolition subcontractor. Work with the demo sub to identify materials that can be recovered through the demo process. Contractual language will back this up.

Documentation: Project teams that opt for this credit will provide documentation in the form of thank you letter or receipt from receiving entity, photo of items recovered, and contract language with demo sub if that path was taken.



Shaw

Shaw

Shaw

HEALTH & WELLBEING



CARBON



PRODUCT END OF USE



sustain[HUMAN]ability®

ESP DEALER re[TURN] RECLAMATION PROGRAM

YOU'RE INVITED
TO PARTICIPATE IN

re[TURN]TM

RECLAMATION PROGRAM



Human beings
don't have a
pollution
problem...

They have a
design problem.

- William McDonough & Michael Braungart
The Upcycle

Linear Economy vs. Circular Economy

Tell your story



TAKE BACK

Credit: C/lockwork AD

RECLAMATION

RECYCLABLE

RECOVERY

RETURN

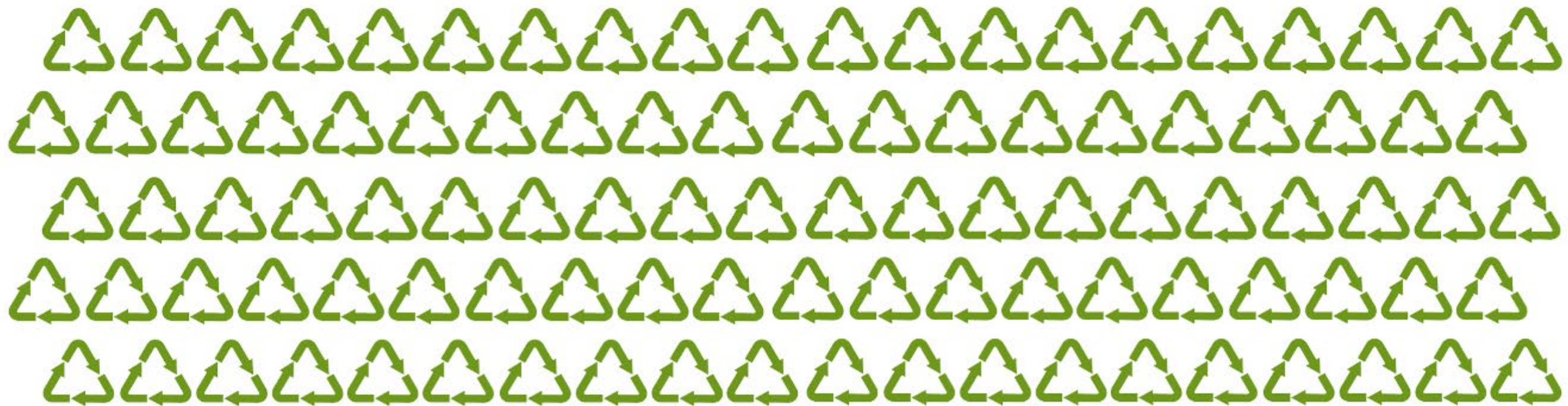
Design by Smallwood, Reynolds, Stewart & Stewart Associates
Photography by Robbins Photography Inc.

re[TURN][®]

Since 2006, Shaw has reclaimed and recycled almost

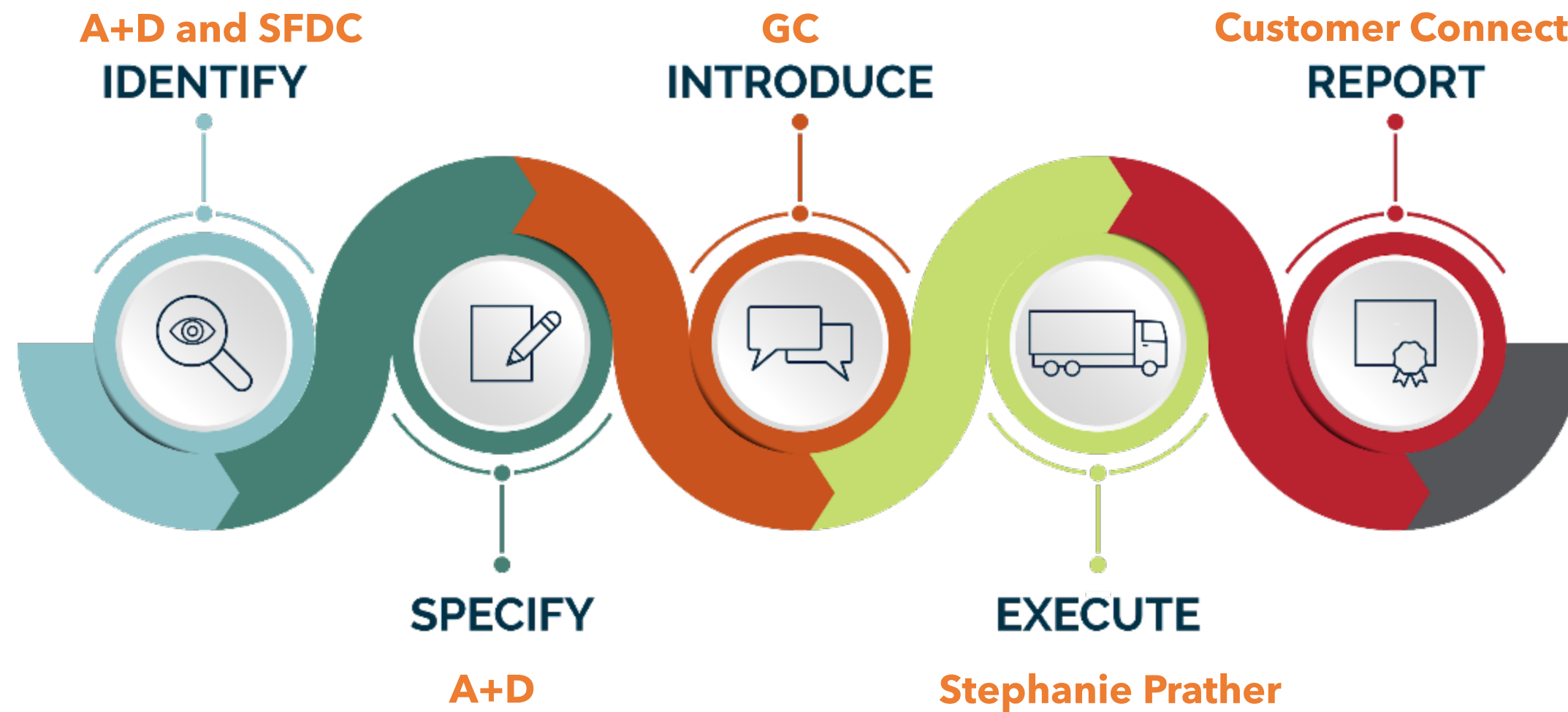
1 Billion Pounds

of carpet – including EcoWorx[®].



 = 10 million lbs. each

FIVE STEPS TO SUCCESS





WE WANT
IT BACK

Empower clients to
participate in the
Circular Economy





SECTION 01 3543.19
CARPET TILE RECLAMATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Procedures for reclamation, not land disposal
- B. Section relates to:
 - 1. Section 02 4116.0
 - 2. Section 02 4119
 - 3. Section 09 6813

1.2 DEFINITIONS

- A. Clean Carpet: Carpet free of contamination, garbage, and debris

1.3 REFERENCES

- A. Carpet and Rug Institute of Commercial Carpet

1.4 SUBMITTALS

- A. Review Submittals:
 - 1. Designation of general materials
 - a. Carpet removal
 - b. Used carpet tile
 - 2. Proposed:
 - a. Packing and taping
 - 3. Schedule of carpet removal
 - a. Contact the carpet tile manufacturer
 - b. Provide detailed collection to carrier
 - c. Provide inventory
- B. Carpet Tile Submittals:
 - 1. Submit carpet tile verification
 - a. Identify carpet tile
 - b. Photos of carpet tile
 - c. Square footage
 - d. If mixed backing
 - 2. Certifications from the manufacturer and recycled or diverted materials

1.5 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with governing regulations, including hauling and disposal.

1.6 PROJECT CONDITIONS

- A. Maintain possession of removed used carpet; place in a covered container for pick up or trailer.

1.7 COORDINATION

- A. Contractor is responsible for the demo and staging of materials, including manufacturer reclamation department guidelines.
- B. Coordinate with the carpet tile manufacturer's reclamation entity to schedule pickup logistics.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Only Shaw EcoWorx carpet tile and some types of recycled. All other carpet tile types, including those diverted from landfill.
- B. All collections of polyurethane cushioned carpet tile cost to be downcycled.
- C. Quantity must be a minimum of 500 square feet.
- D. Project must be located within the continental United States only.
- E. Tiles must be stacked flat and neatly on pallets no wider than 44".
- F. All pallets must be strapped to secure tiles with straps, one on each pallet side. Rope or twine may be used if necessary. All pallets must be shrink wrapped during transit.
- G. Material must be stored in a clean and dry location accessible by trailer.
- H. Material must be staged on pallets no wider than 4 ft. by 4 ft. for loading in trailer side-by-side.
- I. All carpet tiles must be palletized separately.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Contractor is responsible for contacting the manufacturer reclamation department or recycling entity and preparing for pickup.

3.2 CARPET REMOVAL

- A. Material must be dry and free of non-carpet debris.

LOAD STAGING

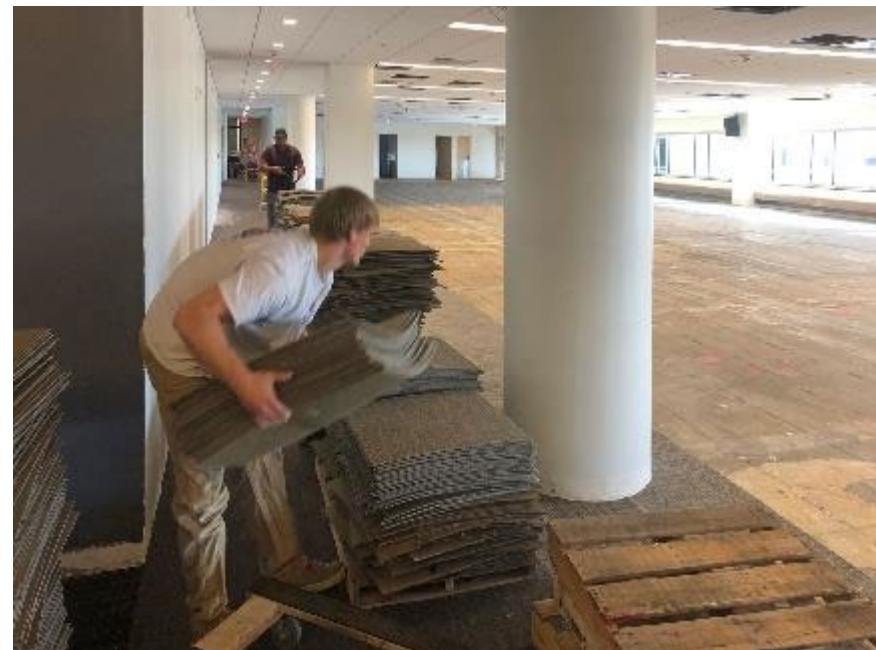
- A. Contractor is responsible for loading material onto the trailer.
- B. The pick-up location must accommodate a 53-ft. trailer.
- C. If 53-ft trailer is not accessible, alternatives such as pup trailers, drop trailers, etc. will be provided as necessary at additional cost. These services are available in the continental United States only.
- D. Material must be stored in a clean and dry location accessible by trailer.
- E. Material must be staged on pallets no wider than 4 ft. by 4 ft. for loading in trailer side-by-side.
- F. Tiles must be stacked flat and neatly onto pallets at least 38" high and no wider than 44".
- G. Pallets must be strapped to secure the material during shipment - at least two straps, one on each pallet side. Rope or twine can be used for strapping pallets must be shrink wrapped tightly to ensure stability during transit.

DROP TRAILER STAGING

- A. Contact carpet tile manufacturer reclamation department or recycling entity to schedule container drop-off, timeline and applicable costs. Drop trailers, etc. will be provided as necessary at additional costs. Drop trailers are available in the continental United States only.
- B. Contractor is responsible for determining secure location and access for drop-off.
- C. Contractor is responsible for determining secure location and access for drop-off.
- D. Contractor is responsible for determining secure location and access for drop-off.
- E. Contractor is responsible for determining secure location and access for drop-off.
- F. Contractor is responsible for determining secure location and access for drop-off.
- G. Contractor is responsible for determining secure location and access for drop-off.
- H. Contractor is responsible for determining secure location and access for drop-off.
- I. Contractor is responsible for determining secure location and access for drop-off.
- J. Contractor is responsible for determining secure location and access for drop-off.
- K. Contractor is responsible for determining secure location and access for drop-off.
- L. Contractor is responsible for determining secure location and access for drop-off.
- M. Contractor is responsible for determining secure location and access for drop-off.
- N. Contractor is responsible for determining secure location and access for drop-off.
- O. Contractor is responsible for determining secure location and access for drop-off.
- P. Contractor is responsible for determining secure location and access for drop-off.
- Q. Contractor is responsible for determining secure location and access for drop-off.
- R. Contractor is responsible for determining secure location and access for drop-off.
- S. Contractor is responsible for determining secure location and access for drop-off.
- T. Contractor is responsible for determining secure location and access for drop-off.
- U. Contractor is responsible for determining secure location and access for drop-off.
- V. Contractor is responsible for determining secure location and access for drop-off.
- W. Contractor is responsible for determining secure location and access for drop-off.
- X. Contractor is responsible for determining secure location and access for drop-off.
- Y. Contractor is responsible for determining secure location and access for drop-off.
- Z. Contractor is responsible for determining secure location and access for drop-off.

re[TURN][®]

In Action





ShawContract®

IN RECOGNITION OF A

Carbon Neutral Carpet Installation

PRESENTED TO

Fifth Third Bank CSC in Grand Rapids, MI



Feels good to do good. **Today and Tomorrow.**

Today

Carbon Neutral Carpet made with EcoWorx® backing is durably made and measurably kind.



Your purchase includes

17,545 square yards

of Carbon Neutral EcoWorx® carpet tile.



This carpet contains an average of

60% recycled content

and is 100% recyclable with guaranteed collection and recycling through our re[TURN]® program and Environmental Guarantee.

Tomorrow

By recycling EcoWorx® carpet instead of using virgin materials:



Approximately

527,100 pounds

of carpet will be diverted from the landfill.



Approximately

2,351,400 pounds

of CO₂ will be saved, which is equivalent to planting nearly

1,297 acre(s)

of trees.

re[TURN]®

RE[TURN]® RECOGNITION

CERTIFICATE

PRESENTED TO

FBI Cincinnati Field Offices

for the recycling of **4,948** square yards of post-consumer EcoWorx carpet on **05/23/2023**

Your decision to eliminate landfill waste will allow us to recycle your carpet
and create new materials for future generations.

BASED ON THE **4,948** SQUARE YARDS OF ECOWORX® CARPET BEING RETURNED...



YOU HAVE **PREVENTED**
27,215 POUNDS OF WASTE
GOING TO YOUR **LANDFILL**



APPROXIMATELY **5,040** GALLONS OF
GASOLINE WERE **SAVED**, WHICH IS ENOUGH
TO DRIVE **54** MILES IN AN
AVERAGE CAR.



APPROXIMATELY **98,800** POUNDS
OF **CO2e** WERE **SAVED**, WHICH IS
EQUIVALENT TO PLANTING NEARLY
54 ACRE(S) OF TREES.

Kelley Fain, Executive Vice President Commercial Division

05/23/2023

date

re[TURN]®

patcraft®



re[TURN][®] Pipeline

What does it cost to throw away?

		Price Per Ton		20 Yard Fee		Price Per Yard		Price per 2000 yards		
								6 Tons		
Newark NJ		\$102		\$500		0.56		\$1,112		
Miami FL		\$71		\$500		0.46		\$926		
Atlanta GA		\$60		\$500		0.43		\$860		
Seattle WA		\$185		\$500		0.81		\$1,620		
Dallas TX		\$58		\$500		0.42		\$848		
Columbus OH		\$39.75		\$500		0.37		\$738		
Omha NE		\$27.71		\$500		0.33		\$666		
St Louis		\$58		\$500		0.42		\$848		
Boston MA		\$122		\$500		0.62		\$1,232		
Pittsburgh		\$41.80		\$500		0.38		\$750		
Tampa		\$44		\$500		0.38		\$750		
MSP		\$122		\$500		0.62		\$1,232		
San Francisco		\$175		\$500		0.78		\$1,550		
Phoenix		\$44		\$500		0.38		\$750		
Nashville		\$75		\$500		0.48		\$950		
Philadelphia		\$120		\$500		0.61		\$1,220		



ESG stands for **Environmental, Social** and **Governance factors** — and is a criteria used primarily by investors in evaluating how a business is affected by environmental and social issues, and whether they have good governance in place to manage those risks.



COLLABORATION

- Owners
- Architects
- Interior Designers
- Demolition Subcontractors
- Deconstruction/Selective Demolition Subs
- Installing subcontractors
- Waste Haulers
- Governments/Cities/Municipalities
- Manufacturers
- Reuse vendors and resalers
- Testing and Certification Agencies
- Workforce Development/Equity Professionals



QUESTIONS / COMMENTS?